Advanced Medical Imaging Technology Program

Magnetic Resonance Imaging Master Plan of Education

2019-2020

Alan W. Vespie, MEd, CNMT, RT(N)
AMIT Program Director
Nuclear Medicine Program Director
Alan.Vespie@uc.edu
513-558-7497

Barry Southers, MEd, RT(R)(MR)(FSMRT)
Magnetic Resonance Imaging Program Director
Barry.Southers@uc.edu
513-558-7415

Whitney Bowen, BS, RT(MR), CNMT
Nuclear Medicine & MRI Clinical Coordinator
bowenwn@ucmail.uc.edu
513-558-3515

Program Fax – 513-558-4009
# TABLE OF CONTENTS

AMIT Program Overview & History .............................................. 3
Program Faculty & Staff Information ................................. 4
UC Student Code of Conduct ............................................. 5
FERPA .................................................................................. 6
Authorization Form ......................................................... 7
ADA Compliance ............................................................... 9
Curriculum Notes .............................................................. 10
Certificate Student Information ........................................ 11
Academic coursework ...................................................... 13
Course textbook list .......................................................... 16
Criteria for completion ..................................................... 17
Dress Code policy .............................................................. 22
CITI Training information ................................................ 25
Emergency procedures ..................................................... 27
Pregnancy policy ............................................................... 33
Miscellaneous program policies ........................................ 36
Student Leave Authorization form ..................................... 43
Clinical Affiliation List ....................................................... 44
Academic Calendar ............................................................ 45
Student Resources ............................................................. 46
MRI Clinical Competencies Information ......................... 47
MRI Clinical Evaluation Forms ....................................... 57
MRI Case Study Rubric ..................................................... 60
MRI Student Uniform ....................................................... 61
MRI Screening Form ......................................................... 62
MRI Student Checklist ....................................................... 63
AMIT MRI Student Contract ........................................... 64
MRI Program Syllabi .......................................................... 65
The University of Cincinnati offers a Bachelor of Science degree in Advanced Medical Imaging Technology to meet the evolving demands of the marketplace and to provide maximum flexibility to today’s healthcare student. After taking two years of general education courses, Advanced Medical Imaging Technology students enter the professional education curriculum. Students will combine classroom and clinical training to become competent in two or more healthcare medical imaging specialties. Upon completion of the professional curriculum, graduates are eligible to sit for national board exams, a necessity in nearly all healthcare fields.

The imaging modalities available to study are: Magnetic Resonance Imaging and Nuclear Medicine Technology.

**Magnetic Resonance Imaging Description**
Magnetic Resonance Imaging is the medical specialty that utilizes magnetic fields and their properties in the diagnosis of disease and the analysis of human anatomy. Training in Magnetic Resonance Imaging is twelve consecutive months in duration and will be delivered through a combination of classroom lectures, labs, and clinical site placements. Students successfully completing the curriculum will have fulfilled requirements to sit for the nationally administered board examination.

**AMIT Program Vision Statement**
The Advanced Medical Imaging Technology program wishes to combine the needs of students, healthcare providers, the public and the University to cultivate a program for preparing competent, credentialed diagnostic medical imaging professionals. To bring the vision of this program to the greatest number of individuals, multiple points of entry, multiple means of departure, pathways for continuing one’s education, and pathways for meeting changing educational requirements of the profession need be established.

This program will strive to produce competent, multi-skilled, imaging technologists and to provide certificate opportunities for those seeking to further their education. Graduates of this program will have obtained the level of didactic and clinical training necessary to meet eligibility requirements for national board examinations in their chosen modalities.

**Mission – Magnetic Resonance Imaging Program**
The mission of this program is to produce competent, multi-skilled, Magnetic Resonance Imaging technologists. Graduates of this program will have obtained the level of didactic and clinical training necessary to meet eligibility requirements for national board examinations in Magnetic Resonance Imaging. While passage of these examinations are up to the individual and therefore cannot be guaranteed by the program, it is the program’s goal to supply each graduate with the necessary level of training and experience to adequately prepare for these examinations.

**Nuclear Medicine Technology**
Nuclear Medicine Technology is the medical specialty that utilizes stable and radioactive isotopes in the diagnosis and treatment of disease. Training in Nuclear Medicine Technology is twelve consecutive months in duration and will be delivered through a combination of classroom lectures, labs, and clinical site placements. Students successfully completing the curriculum will have fulfilled requirements to sit for the nationally administered board examination.

**Mission and Goals – Nuclear Medicine Technology**
It will be the goal of this program to produce competent, multi-skilled, imaging technologists. Graduates of this program will have obtained the level of didactic and clinical training necessary to meet eligibility requirements for national board examinations in their chosen modalities. While passage of these examinations are up to the individual and therefore cannot be guaranteed by the program, it is the program’s goal to supply each graduate with the necessary level of training and experience to adequately prepare for these examinations.

**History**
The Advanced Medical Imaging Technology (AMIT) Program was originally developed in 1964 as a Nuclear Medicine Technology Program and offered both an associate and baccalaureate degree. The baccalaureate degree in Nuclear Medicine Technology was the first in the nation of its type.

In 1996, the program became a baccalaureate only, multicredential, diagnostic medical imaging program. While several diagnostic imaging programs offer multicrodentialing as an option for its students, AMIT is the first program that has multicredentialing as its academic focus.

The first multicredential students began their professional curriculum in 1999. In 2003, AMIT began to offer a Certificate to provide an avenue for post-baccalaureate students who were unwilling or unable to pursue a second baccalaureate or an advanced degree.
Program Faculty & Staff Information

Alan Vespie, MEd, CNMT, RT(N)
AMIT Program Director
Nuclear Medicine Program Director

Alan is a product of the AMIT program earning his baccalaureate degree in 1982 from the University of Cincinnati after completing his studies in Nuclear Medicine Technology. He worked at Miami Valley Hospital in Dayton for 4 ½ years as a nuclear medicine technologist before coming back to the University of Cincinnati. Upon returning to the university, he served in the capacity of both a staff and research technologist. In 1992, he was appointed as the program’s educational coordinator and assumed full responsibility for the program’s operation in 1993. He was awarded his Master’s Degree in Education in 1997 from the University of Cincinnati, College of Education where he specialized in Curriculum and Instruction in Adult Higher Education. He has worked for approximately 30 years in nuclear medicine and has been involved in the instruction of students for every moment of those 30 years as either a clinical preceptor or classroom instructor.

Barry Southers, MEd, RT(R)(MR)(FSMRT)
Magnetic Resonance Imaging Program Director

Barry, a registered Radiologic Technologist and MRI Technologist by the ARRT, is a full-time Associate Professor, MRI faculty instructor and MRI Program Director for the AMIT program. Barry completed his radiography education at the University of Kentucky in Lexington, Kentucky in 1992, and received a Bachelor’s Degree in Radiation Science Technology from the University of Cincinnati in 2007. He completed his Master’s Degree in Medical Education at the University of Cincinnati in 2012, with a focus on Medical Curriculum and Instruction. Barry has been a Radiologic Technologist since 1992, and an MRI Technologist since 1996. Barry has several years of experience as a guest lecturer on the local, national and international level. He is the author of published articles on Magnetic Resonance Imaging in medical imaging magazines and journal publications, and the author of several abstracts and poster presentations.

Whitney Bowen, BS, RT(MR), CNMT
Nuclear Medicine & MRI Clinical Coordinator

Whitney is a registered MRI and Nuclear Medicine Technologist. She is a 2010 graduate from the AMIT Program and is currently pursuing her Master’s of Education in a joint program with Cincinnati Children’s Hospital and UC. Immediately following AMIT program graduation, Whitney began working for the AMIT program as an administrative assistant and clinical coordinator. In May 2016, Whitney accepted a position as a visiting instructor in the AMIT program. Currently she teaches several of the program courses and is the clinical coordinator for MRI and Nuclear Medicine students. Prior to her current position she worked as an MRI technologist at ProScan Imaging in Indianapolis and Mercy Health Anderson in Cincinnati and Nuclear Medicine technologist at Mercy Health Clermont.
PREAMBLE

University of Cincinnati Mission Statement

The University of Cincinnati is a public comprehensive system of learning and research. The excellent faculty have distinguished themselves worldwide for their creative pedagogy and research especially in problem solving and the application of their discoveries.

The University system is designed to serve a diverse student body with the broad range of interests and goals. It is a place of opportunity. In support of this mission, the University of Cincinnati strives to provide the highest quality-learning environment, world-renowned scholarship, innovation and community service, and to serve as a place where freedom of intellectual interchange flourishes.

All members of the University community shall take responsibility for conducting themselves in ways that continue the pursuit of the University’s mission.

The Student Code of Conduct shall emphasize specific student responsibilities:
1. To recognize that the intellectual and educational climate of the University shall be maintained as the University’s highest priority.

2. To protect the opportunity for each student to attain their educational objectives.

3. To protect the physical and mental health, safety and welfare of each member of the University community.

4. To protect the property rights of all.

5. To promote the human rights of all members of the University community.

The Student Code of Conduct applies to all Advanced Medical Imaging Technology Students which includes Certificate, Baccalaureate, or Graduate level students whether enrolled as a full-time or part-time student.

The Student Code of Conduct may be found in its entirety at

http://www.uc.edu/conduct/Code_of_Conduct.html

Students are expected to abide by the professional codes of conduct and ethics associated with their current modality.

American Registry of Radiologic Technologists
American Society of Radiologic Technologists
International Society of Magnetic Resonance in Medicine
Society of Nuclear Medicine and Molecular Imaging
Society of Computed Tomography and Magnetic Resonance
Important Facts Parents NEED to Know about Record Privacy & Record Release at UC

1) UC’s record release policies are governed by federal government regulations collectively known as the “Family Educational Rights and Privacy Act of 1974, as Amended” (FERPA), and by State of Ohio law. The University of Cincinnati CANNOT waive FERPA or State regulations for ANY reason.

2) Under FERPA, Record Privacy rights transfer from the parents to the student once the student reaches 18 years of age or once he/she enrolls in an institution of higher learning. In either scenario, FERPA then regards the parents as “3rd parties.” Record release to all 3rd parties requires the student’s prior written and signed consent.

3) Parents may obtain student end-of-term grades and GPA information, only if:
   a) they can provide the Registrar’s Office with a copy of their most recently submitted federal tax return documents establishing the student as their financial dependent (family income amounts may be obscured); or
   b) the student provides the Registrar’s Office with his or her written, signed and dated consent (the student can rescind this authorization in writing at any time). Students should contact the Registrar’s Office for details.

4) Parents may obtain student bill and health insurance information, only if:
   a) the student has established an online One Stop Student Services Parent PIN authorizing the access. Note: if/when required, the Parent PIN must be reset directly by the student.

5) Record release to parents (and to all 3rd parties) occurs at the University’s discretion, even if the parents provide the qualifying tax return or the student’s written consent. The University reserves the right to deny requests for any and all student information to all 3rd parties, including parents.

6) The student’s written consent or the parents’ tax return may allow record release only. These documents do not constitute a “Power of Attorney” and so do not authorize the parents to take action in the student’s name or on his/her behalf.

7) All 3rd party requests to UC for student records must be submitted in writing directly to the Registrar’s Office.
   In all cases, 3rd parties (including parents) attempting contact with administrative offices, college offices, or the faculty will be referred to the Registrar’s Office. The Registrar’s Office will assess both the parents’ written request and the submitted authorizing documents and will provide a response. The Registrar’s Office will contact other administrative and/or college offices for information as required. Parents should not expect a same-day response from the Registrar’s Office to their information requests.

8) UC does not provide regular or automatic per-quarter information releases (e.g., final grades) to any 3rd party (including parents). Parents authorized for release by either the student’s written consent or by their own tax return must submit a written request to the Registrar’s Office on each occasion.

9) FERPA permits UC to release the student’s “Directory Information” to anyone upon request without the student’s prior consent or notification. “Directory Information” at UC is: name; student identifier (non-Social Security Number), current mailing address, current telephone number, e-mail address (BOL), college, class, major, dates of attendance, enrollment status (full/part-time), degrees/honors/awards received (including dates received).

10) Students may request that UC not release his or her “Directory Information” by submitting a form to the Registrar’s Office. Students should contact the Registrar’s Office for details.

Personally Identifiable Information/Record Release
Authorization Form

Student’s Name: ______________________________ (Please print)
M Number: ______________________________

As required by the Family Educational Rights and Privacy Act of 1974, as Amended (FERPA), by my signature below I hereby authorize University of Cincinnati to furnish the following information to one or more of the following clinical education settings as listed below upon request. This information is necessary to meet healthcare institution requirements for patient safety and accreditation. Students may also be required to undergo drug testing in order to participate in clinical experience at some clinical education settings. School will disclose information from a student's educational record, as appropriate, to personnel at Facility who have a legitimate need to know in accordance with the Family Educational Rights and Privacy Act. Facility agrees that its personnel will use such information only in furtherance of the Program, and that the information shall only be disclosed to third parties in accordance with the Family Educational Rights and Privacy Act.

Clinical Education Settings:
- Bethesda North Hospital- 10500 Montgomery Road, Cincinnati, OH 45242
- The Christ Hospital- 2139 Auburn Avenue, Cincinnati, OH 45219
- Cincinnati Children’s Hospital Medical Center - 3333 Burnet Avenue, Cincinnati, OH 45229
- Dearborn County Hospital- 600 Wilson Creek Road, Lawrenceburg, IN 47025
- Fort Hamilton Hospital- 630 Eaton Avenue, Hamilton, OH 45013
- Good Samaritan Hospital- 375 Dixmyth Avenue, Cincinnati, OH 45220
- Good Samaritan Medical Center at Western Ridge- 6949 Good Samaritan Drive, Cincinnati, OH 45247
- The Jewish Hospital- 4777 East Galbraith Road, Cincinnati, OH 45236
- Mercy Anderson Hospital- 7500 State Road, Cincinnati, OH 45255
- Mercy Clermont Hospital- 3000 Hospital Road, Batavia, OH 45103
- Mercy Fairfield Hospital- 3000 Mack Road, OH 45014
- Proscan Eastgate- 4440 Glen Este-Withamsville Road, Cincinnati, OH 45245
- Proscan Mason- 4900 Parkway Drive, Cincinnati, OH 45040
- Proscan Midtown- 5400 Kennedy Avenue, Cincinnati, OH 45213
- Proscan Paul Brown Stadium- 6 Paul Brown Stadium, Cincinnati, OH 45202
- Proscan Tri County- 12124 Sheraton Lane, Cincinnati, OH 45246
- Proscan Tylersville- 7307 Tylers Corner Drive, West Chester, OH 45069
- Proscan Troy- 45 South Stanfield Road, Troy, OH 45373
- Proscan Westside- 6125 Harrison Avenue, Suite A, Cincinnati, OH 45247
- St Elizabeth Edgewood- 1 Medical Village Drive, Edgewood, KY 41017
- St Elizabeth Florence- 4900 Houston Road, Florence, KY 41042
• St Elizabeth Ft Thomas- 85 North Grand Avenue, Ft Thomas, KY 41075  
• Tri Health Anderson- 7777 Beechmont Avenue, Cincinnati, OH 45255  
• University of Cincinnati Radiation Safety-170 Panzeca Way, Cincinnati, OH 45267  
• University Hospital- 234 Goodman Street, Cincinnati, OH 45219  
• V.A. Medical Center-3200 Vine Avenue, Cincinnati, OH 45220

Possible Information Provided:
• My Name  
• My Social Security Number  
• My Gender  
• My Date of Birth  
• My Immunization Record  
• Background Check: Federal and State

➡️ Student’s Signature: ____________________________ Date: __________
ADA Compliance

**Students with Disabilities**
The Disability Services Office is dedicated to empowering students with disabilities through the delivery of reasonable accommodations and support services while educating the UC community to see beyond disabilities to the richness of inclusion.

Students with disabilities who need academic accommodations or other specialized services while attending UC will receive reasonable accommodations to meet their individual needs as well as advocacy assistance on disability-related issues. We are strongly committed to maintaining an environment that guarantees students with disabilities full access to educational programs, activities, and facilities.

In addition to academic accommodations in the classroom, students, faculty, or staff are encouraged to use the Disability Services resources in 410 Langsam.
To ensure timely implementation of academic accommodations:
Make your request as soon as your disability is confirmed.
Make your request at least eight (8) weeks before the quarter begins.
Please request interpreters or real-time captioning at least two (2) weeks prior to a program or event.

Disability Services Office Location & Hours
210 University Pavilion
Phone: 513-556-6823
TTY: 513-556-3277
Fax: 513-556-1383
Relay: 711

Hours: Monday-Thursday 8 am - 6 pm; Friday 8 am - 5 pm
E-mail: Disability Services

Students requesting accommodation for disability or health reasons are responsible for notifying the Instructor by the end of the first week of the quarter to discuss specific needs. Self-identification is the only way to assure that the faculty member can make the appropriate accommodation. Students should provide a letter from the Disability Services (210 University Pavilion; 513-556-6823; TTY 513-556-3277; FAX 513-556-1383; or Relay 711 to verify the disability.
NOTES REGARDING THE AMIT CURRICULUM

Admission into the Professional Education component of the Advanced Medical Imaging Technology Program is a competitive process and not everyone meeting the minimum criteria for acceptance will be admitted. Although the limiting factor is usually the availability of clinical sites, program faculty are under no obligation to accept a student into the professional curriculum simply because availabilities exist. The number of clinical sites available from one year to the next is variable. Program officials will not know the number of available sites until Summer semester.

Currently, the following four criteria are considered by program officials when selecting applicants. The program is continuously reviewed and updated. As such, the program reserves the right to alter the selection criteria without warning in response to changing conditions.

1. Quality of application
   a. Preparation
      i. Civic engagement
      ii. Observation/shadowing/first-hand knowledge of the disciplines
   b. Evidence of good character
   c. Written communication
      i. Strict adherence to formal grammar, spelling, and punctuation is expected.

2. Overall GPA
   a. Breadth and comprehension of academic background
      i. Transcripts for ALL previous collegiate work is submitted with the application.

3. Math and Science GPA
   a. Comprehension of coursework directly related to professional studies
      i. All math and science courses taken to meet program requirements are considered.
      ii. Math and science work completed in more advanced classes are considered if they are being used to meet program requirements.

4. Group Project
   a. Interpersonal interactions
      i. Generally about 6 – 10 applicants per group

5. Minimum overall GPA of 2.8 is required at time of application.

Applications deadlines are established each year by the program but will most likely occur during the first week of January. The first three stages of the application process are usually completed in January and February. Only those students meeting the minimum criteria stated in the application will be invited to the final stage. The final stage will be completed in March with students being notified of the decisions in April. Unanticipated circumstances may extend these dates and applicants will be notified when/if delays should occur. Communication between applicants and program officials will occur primarily via email so applicants are urged to include an email address that they check regularly on their application.
Advanced Medical Imaging Technology
Certificate Programs

The College of Allied Health Sciences offers professional certificates in Magnetic Resonance Imaging and Nuclear Medicine Technology. The ideal certificate student will be one who has already earned a Bachelor degree or higher from an accredited institution and wishes to acquire additional skills and knowledge.

In addition to the Bachelor Degree, additional prerequisites include one course of pathophysiology, one year of college chemistry, one year of college physics, one year of college mathematics of algebra and higher, and one year of anatomy and physiology. If these courses were not taken as part of the Bachelor degree, they must be obtained before entering the certificate program. The University of Cincinnati will only accept academic credits completed during the past ten years.

Alternate eligibility is offered to health care professionals. These individuals must hold at least an Associate Degree in a health care profession from an accredited institution and have at least a one-year equivalent of full-time experience in the health care field within their specialty. One course of pathophysiology, one year of college chemistry, one year of college physics, one year of college mathematics (algebra and higher) and a year of anatomy and physiology are required. If these courses were not taken as part of the degree, they must be obtained before entering the certificate program. These requirements are under constant review and may be changed without notice.

The program is 12 consecutive months in duration. Through a combination of classroom and clinical instruction, students will be taught the specific skills needed for entry-level positions in their chosen modality.

Curriculum
The Certificate in Advanced Medical Imaging Technology involves 12 consecutive months beginning in the fall semester.

Pre-certificate courses listed here must be completed before entering the certificate curriculum. They may be completed as part of a degree program or separately in addition to a degree program.

Pre-Professional Course Work:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics: College Algebra and Trigonometry or higher</td>
<td>6</td>
</tr>
<tr>
<td>College Physics</td>
<td>10</td>
</tr>
<tr>
<td>Chemistry</td>
<td>8</td>
</tr>
<tr>
<td>Anatomy &amp; Physiology</td>
<td>8</td>
</tr>
</tbody>
</table>

Certificate Curriculum
Human Sectional Anatomy
AMIT Orientation and Patient Care Techniques
12-month curriculum in Magnetic Resonance Imaging or Nuclear Medicine Technology
**What you need to know about the certificate program**

Students who successfully complete the Certificate Program will receive the training necessary to accept an entry-level position in their chosen specialty and will be board eligible. However, there are some differences between the Certificate program and the Bachelor degree program.

**Length of Study**
The Certificate program is 12 consecutive months in duration (three academic semesters). The Bachelor degree is 24 consecutive months in duration. Certificate students receive training in one imaging modality while Bachelor degree students receive training in two imaging modalities. Certificate students may transfer up to 1 year of certificate credits toward a Bachelor degree in AMIT provided they complete a second year in AMIT as a matriculated Bachelor degree student.

**Transcripts and Enrollment**
International student must have their transcripts evaluated for American equivalency through organizations such as WES.

Domestic students must have their transcripts evaluated by the Advanced Medical Imaging Technology Program and/or the University of Cincinnati.
ACADEMIC COURSEWORK

Magnetic resonance imaging technology curriculum:

AMIT4004 Diagnostic Magnetic Resonance Imaging I
This is the first in a sequence of three courses discussing the diagnostic uses of Magnetic Resonance Imaging. This course will emphasize the human central nervous system (brain and spine) anatomy as seen in multiple orthogonal planes. Distinctions between normal and abnormal with respect to anatomy and physiology will be determined.

AMIT4005 Diagnostic Magnetic Resonance Imaging II
This is the second in a sequence of three courses discussing the diagnostic uses of Magnetic Resonance Imaging. This course will emphasize the human musculoskeletal system (upper and lower extremities) and the soft tissue of the neck as seen in multiple orthogonal planes. Distinctions between normal and abnormal with respect to anatomy and physiology will be determined.

AMIT4006 Diagnostic Magnetic Resonance Imaging III
This is the third in a sequence of three courses discussing the diagnostic uses of Magnetic Resonance Imaging. This course will emphasize the human thorax, heart, abdomen and pelvic anatomy as seen in multiple orthogonal planes. Distinctions between normal and abnormal with respect to anatomy and physiology will be determined.

AMIT4007 MRI Physics and Instrumentation I
This course is the first in a sequence of three courses on Magnetic Resonance Imaging Physics and Instrumentation. This course will study the physical principles, instrumentation and concepts of MRI, including the study of MRI safety, patient screening and patient care issues associated with the function of the scanner.

AMIT4008 MRI Physics and Instrumentation II
This course is the second in a sequence of three courses on Magnetic Resonance Imaging Physics and Instrumentation. This course will study T1 recovery and T2 decay, T1, T2 and proton density, image contrast, basic concepts of pulse sequences, encoding, k-space, data collection, Fourier Transform, signal-to-noise, contrast-to-noise, spatial resolution, and spin echo formation and pulse sequences.

AMIT4009 MRI Physics and Instrumentation III
This course is the third in a sequence of three courses on Magnetic Resonance Imaging Physics and Instrumentation. This course will study gradients, gradient echo formation and pulse sequences, flow phenomena, time-of-flight, gradient moment nulling, image artifacts, MRA, diffusion, perfusion, functional MRI, MR Spectroscopy, and the mechanism, safety, and application of MR contrast agents and relaxivity.

AMIT4011 Magnetic Resonance Imaging Directed Practice I
This is the first in a sequence of three courses that will stress practical laboratory experience at clinical sites. MRI students will perform MRI examinations under the direct supervision of clinical preceptors. Students will be responsible for completing required...
clinical hours and MRI competencies on a variety of scanners as they train in local hospitals and imaging centers.

AMIT4012 Magnetic Resonance Imaging Directed Practice II
This is the second in a sequence of three courses that will stress practical laboratory experience at clinical sites. MRI students will perform MRI examinations under the direct supervision of clinical preceptors. Students will be responsible for completing required clinical hours and MRI competencies on a variety of scanners as they train in local hospitals and imaging centers.

AMIT4013 Magnetic Resonance Imaging Directed Practice III
This is the third in a sequence of three courses that will stress practical laboratory experience at clinical sites. MRI students will perform MRI examinations under the direct supervision of clinical preceptors. Students will be responsible for completing required clinical hours and MRI competencies on a variety of scanners as they train in local hospitals and imaging centers.

1st Year Students (Bachelor’s degree & certificate students)

AMIT3015 Human Sectional Anatomy
This course is a survey of the human anatomy in all sectional planes. Medical images from CT, MRI, PET, and SPECT may be used to supplement the textbook. Students will be expected to use proper anatomical nomenclature with respect to body structures. This course will emphasize differentiating between normal and abnormal anatomical structures.

AMIT3020 AMIT Orientation and Patient Care Techniques
This is an introductory course for AMIT students who are entering the professional curriculum. Students will be introduced to workplace ethics, venipuncture, blood pressure monitoring, infection control, ECG monitoring, and proper body mechanics. This course is required for all students entering the AMIT professional curriculum.

2nd Year Students (Bachelor’s degree students only)

AMIT4090 Medical Imaging Research Methods
This is the first course in a sequence of three courses housing the senior capstone experience. During this first course, students are introduced to qualitative and quantitative research methods, basic statistical analysis and interpretation, and institutional research policies.

AMIT4091 AMIT Capstone
This is the second course in a sequence of three courses. This course is the primary AMIT Senior Capstone experience. Students will explore the intricacies of institutional review boards and encounter the style manuals of different publishers in the medical imaging community. Students will develop their literature review into a presentation that will be given at the College's annual PRaISE Conference.
AMIT4092 Medical Imaging Review
This is the third course in a sequence of three courses housing the senior capstone experience. This course will emphasize professional service to the medical imaging community. Students will prepare their literature review according to the style manuals of selected peer-reviewed journals. Students will be guided through professional service opportunities for new graduates. They will begin their professional service by writing a series of board examination questions suitable for their respective modalities. Students will be asked to prepare resumes and will be counseled on job search methods.

Miscellaneous

AMIT5000 Advanced Medical Imaging Technology Practicum
This course is an elective learning experience for students engaged with underserved communities. International service is preferred but domestic opportunities are a consideration for students unable to travel abroad. During their engagement, students will learn and reflect upon local customs, medical issues, economic issues, and government.

Courses are evaluated throughout the year and changes may take place in the curriculum. AMIT program faculty reserve the right to make the curricular changes they deem necessary.
AMIT Textbook List 2016-2017

All 1st Year AMIT & Certificate Students
AMIT 3015 Human Sectional Anatomy

*OPTIONAL Text:*

AMIT 3020 AMIT Orientation

All 2nd Year AMIT (Not required for Certificate Students)
AMIT 4090 Research Methods Imaging

MRI
AMIT 4004 Diagnostic MRI Imaging I
No textbook

AMIT 4007 MRI Physics I

AMIT 4011 MRI Directed Practice I
CRITERIA FOR PROGRESSION AND COMPLETION
ADVANCED MEDICAL IMAGING TECHNOLOGY

1. Each student must abide by and complete the following in order to fulfill the requirements for successful completion of each professional component.
   a) Abide by the University of Cincinnati Student Code of Conduct.
   b) Fulfill the Advanced Medical Imaging Technology Student time requirements (following). Clinical time sheets will be collected weekly.
   c) Account for authorized leave by completing the Leave Authorization Sheet in the event of any absence and supply all documentation to verify the absence/medical leave (pg. 46).
   d) Attend the Clinical Rotation Schedules as assigned.
   e) Meet all educational and performance objectives.
   f) Complete a "Clinical Evaluation Report" every seven weeks or at the end of a clinical rotation. Students must submit each evaluation obtained. Evaluations must be faxed to the AMIT office (558-4009).
   g) Complete the Clinical Competency & Clinical Time Requirements.
      1. If the Clinical Competency & Clinical Time requirements have not been completed by the end of each component of the professional curriculum, the student is given an “incomplete” grade for Directed Practice III and the student is not eligible for board examinations. If all other requirements have been met, the student gains board eligibility once the Competency list/time requirement has been completed. Should this occur during the senior year, the degree is withheld until competencies have been met.
      2. Students may not advance to a second modality until courses within the first modality have been satisfactorily completed and the appropriate grade accepted by the Registrar’s Office.
      3. Student should retain a copy of all completed clinical competencies for their own records. These may assist in resolving discrepancies between work completed and credit earned.
      4. Students may not advance to another modality or obtain their degree unless all didactic and clinical requirements are met, including completion of all clinical competencies required for board eligibility. Program faculty are permitted and encouraged to require students to complete work above and beyond the minimal expectations of board eligibility.
   h) Maintain at least a 3.0 cumulative quality point average for the entire degree program.
   i) Grades lower than a "C" in any professional curriculum course is not acceptable and will result in the immediate dismissal of the student from the professional component.
   j) It is the student’s responsibility to confer with the Program Officials or Academic Advisors at least twice a semester regarding the student’s progress.

2. Students are responsible for assuring that their student records at the program, college, and university level are accurate and up-to-date.

3. These rules and regulations do not change the rules and regulations of the University of Cincinnati or the College of Allied Health Sciences. In cases of conflict, the rules of the University and College shall prevail.
ADVANCED MEDICAL IMAGING TECHNOLOGY

STUDENT REQUIREMENTS

Advanced Medical Imaging Technology Students are responsible for ALL of the following time requirements during each year of their professional curriculum (NO EXCEPTIONS):

1) TIME REQUIREMENTS - Each student will maintain their own clinical time sheet. Time sheets are to be filled out each day during the year and will be collected weekly.
   a) Each student must use only their time sheet. For most clinical rotations, students are expected to arrive no later than 8:00 am and are expected to stay until 4:30 pm. However, different clinical sites have different time expectations and students are expected to meet the time requirements of the individual sites.
   b) In order to log in or out, you must have your time sheet signed by a Senior Technologist, Affiliate Laboratory Supervisor, or Program Official.
   c) Sick days - in the event that you are sick for more than three (3) consecutive days, you must have a Doctor's note stating you may return to school and/or clinicals. Sick leave should be reported on the Leave Authorization form and should be turned in to Program Officials.
   d) All absences must be made up or accounted for before grades are submitted.
   e) Scheduled time off – Students are off during University designated holidays and breaks. Individual programs may elect to use some of winter break for clinical education.
   f) Should students need to schedule time off during the school year for known events (weddings, vacations, etc) the student must have that amount of time already banked. Banked time is accumulated by working additional hours above and beyond their required hours or by attending conferences. Conferences must be approved by the Program Director or Coordinator.
   g) Students are permitted two personal days each year. Since all time off must be made up at time and a half, it is recommended that these personal days be used to accommodate the observance of religious or ethnic celebrations. Students not needing these days to facilitate such accommodations are permitted to use them as needed.
   h) Students may not work in a job and simultaneously receive academic credit. Work and school are mutually exclusive events.
   i) All time off outside of University designated holidays and breaks must be made up in a manner suitable to the Program Director/Coordinator of each individual modality. (time and a half unless banked hours were acquired prior to the absence)
   j) The minimum time requirement for students during each professional curriculum year is 12 consecutive months, five days per week, with a minimum of 1800 hours per year. There may be some variance between each imaging modality. Students will be expected to adhere to the requirements of their modality.
   k) Time accumulated in excess of the required time has no bearing on required attendance as noted by the University of Cincinnati and may not be carried forward from semester to semester or from the Junior year to the Senior year.
   l) If the time requirement has not been met by the end of a professional component, the student is given an “incomplete” grade for Directed Practice III and the student is not eligible for board examinations, graduation, or advancement. If all other requirements have been met, the student will return to normal status once the time deficiency has been satisfied. Should this occur in the student’s first
year, they will not be eligible to progress to another modality until the time requirements have been satisfied. Should this occur during the final academic year, the degree and/or certificate is withheld until the time requirements have been satisfied.

Deficiencies in time requirements may be made up as follows:

a) The student may have the option after the completion of their professional curriculum year of making up the necessary hours. This opportunity is not guaranteed and may depend on factors not yet determined including the willingness of clinical affiliates. Depending upon the length of the time deficiency, this may render the student ineligible for the next scheduled board examination and/or the next academic year of the professional curriculum, and/or graduation.

b) Clinical time missed must be made up at time and a half unless the student acquired banked time prior to the absence. (Example: If an 8-hour day is missed, the student must make up 12 hours.)

c) Students may make up lost hours during examination weeks or during University designated holidays and breaks. Please note that many sites do close on Holiday’s and you cannot be guaranteed these days as make up days.

d) Students may attend professional conferences at the local, state, national, or international level. Time will be awarded as 1 hour of conference attendance equaling 2 hours of deficient time. Conference attendance time accumulated in any one semester will not carry over to the following semester or from Junior to Senior year. Notes must be taken during each speaker and signed by a conference official to be credited for clinical time. Additionally, conference certificates will need to be submitted as attendance verification.

The above methods may only be used to make up for deficient time. It may not be used to satisfy time requirements prior to the end of the required 12 months. Students will not be permitted to use banked time as a substitute for class or clinical attendance at the end of a semester/year.

Miscellaneous Requirements/Expectations

a) Student identification badges are required to be worn visibly and face-up during clinical rotations for security reasons. Students are responsible for obtaining these identifications. Some clinical affiliates may require additional identification.

b) Nuclear Medicine dosimeters must be worn during all nuclear medicine rotation hours.

c) Clinical affiliates have the right to deny any student clinical time at their premises. No reason is required. Reasonable attempts will be made to place the student in another clinical site by program faculty.

d) Class attendance throughout the program is mandatory. Unexcused absences will result in a reduction of grade.

e) All cell phones and pagers must be silenced before entering the classroom unless prior approval of the instructor is granted. Permission will be granted only under extenuating circumstances. Cell phones are not permitted during clinical rotation hours.

f) There will be no sleeping during class. Professional conduct is expected of our students at all times.

g) Students will not be permitted to advance into a second modality unless all of the requirements of the first modality have been completed. All grades lower than a
C are not considered as meeting the requirements of any of the imaging modalities. All grades of I, NG, W, or other similar designations indicating incomplete coursework must be resolved prior to advancement or graduation.

g) Baccalaureate students not appearing on the official University Registrar’s class list may not attend class and will not receive credit for work performed.

h) Students are responsible for attending to any details that may preclude their enrollment in a timely manner. If the University does not recognize the student’s enrollment, grades will not be issued regardless of attendance or performance.

i) Any student with a criminal conviction should seek pre-approval from the board examination organization for their chosen modality/modalities at the beginning of the academic year.

2) GROUNDS FOR DISMISSAL - Due to the nature of clinical training, students will encounter situations in which their conduct may directly impact the quality of life of themselves as well as the quality of life for patients, supervising technologists and physicians, fellow students, and other university and affiliate personnel. As such, it is imperative that students conduct themselves in a professional manner at all times while on the premises of the university or a clinical affiliate. Specific behaviors will not be tolerated.

The following behaviors are grounds for **immediate dismissal** from the Advanced Medical Imaging Technology Program and may result in the loss of some or all of the monies spent for tuition, books, board examinations, and other education related expenses. The University, College and/or Program will not be liable for any expenses related to a student’s dismissal.

This list is a guideline for unacceptable behaviors and is not necessarily comprehensive.

1. Manufacturing, distribution, selling, using, offering for sale, possessing, buying or attempting to buy any illegal drugs or narcotics.
2. Attending class or clinical rotations while under the influence of alcohol, illegal drugs, or narcotics. Legally prescribed drugs are acceptable when used in the manner prescribed by a licensed physician and the effects of the drugs do not impair the students’ judgment or physical activities.
3. Failure to comply with a university or affiliate official, security personnel, or law enforcement officer acting in the performance of their duty.
4. Intentionally harming, threatening to harm, or intimidating university or affiliate personnel.
5. Intentionally harming, threatening to harm, or intimidating patients, their families or guests.
6. Theft.
7. Failure to show up in a timely and consistent manner for clinical rotations. **No more than three late arrivals per semester are acceptable.**
8. Leaving a clinical rotation early without permission.
9. Failing to comply with the rules, policies, and/or regulations of clinical affiliates.
10. Fighting or quarreling with university or affiliate personnel, patients, or their families or guests.
11. Committing a crime (felony or misdemeanor) while on university or affiliate property. Committing a felony or misdemeanor at any location may result in the student permanently losing eligibility for board examination.
12. Failing to maintain at least a 3.0 grade point average in the program. Receiving any grade lower than a “C” in any professional curriculum course.
13. Either intentionally or unintentionally causing harm to occur to a patient, patient’s guests, or fellow health care worker either through action or omission of
action.
14. Falsifying or altering University, College, Program, and/or Affiliate documents (i.e., time sheets/cards, clinical competency forms, and evaluations).
15. Plagiarism.
16. Failure to comply with program and/or clinical site HIPAA policies.
DRESS CODE POLICY

It is important that patients and visitors to our hospital/laboratory look upon us as professional and competent in the performance of our duties. A strict dress code is an essential part of the impression we make. The professional image we should present is tailored, conservative in color and style, and without ornamentation. In keeping with this objective, the following dress code has been developed for our students. Should this policy conflict with the dress code set forth at clinical affiliates, the dress code of the clinical affiliate shall prevail. Interpretation of this policy is the responsibility of the appropriate supervisor. Failure to comply with the dress code will result in students being barred from taking part in clinical rotations.

Many of our clinical affiliates allow the use of “scrubs” and many of our students find these preferable to street clothes. Under some circumstances, individual institutions may have restrictions on certain types or colors of scrub attire. Program officials recommend that students check with their clinical affiliates prior to purchasing any scrub uniforms.

DURING CLINICAL ROTATIONS:
Safety, comfort, and ease of movement are necessary when dealing with both patients and equipment. The clothing worn by these personnel must reflect this additional consideration.

All items must be clean, pressed, in good repair. No sheer materials may be worn. All garments should be of an appropriate size to permit freedom of movement. The following is a generic guideline. More specific details may be found under each program’s section.

Identification:
Student identification badges are required to be worn visibly and face-up during clinical rotations for security reasons. Students are responsible for obtaining these identifications. Some clinical affiliates may require additional identification.

Clinical Uniform:
Nuclear Medicine and MRI: Scrubs-top and bottoms, conservative solid colors.
*Solid color undershirts are highly recommended.
Laboratory Coats:
Nuclear Medicine: White lab coat. Long sleeved, MUST come down to mid-thigh. Must always be worn buttoned on clinical sites. Lab coats are not to leave clinical sites (especially to lunch) except for the purpose of cleaning.

MRI: White lab coat. May be mid-thigh or shorter. Long or short sleeved is permitted.

Shoes:
Choose shoes that are comfortable. You will be on your feet a great deal. Higher quality shoes may be well worth the additional expense.

White nursing shoes or all white gym shoes with white laces. Should be worn only for clinical rotations.

Nuclear Medicine requires all shoes to have closed toe and heel. Crocs are not acceptable for any of the modalities.

Socks:
White

Hair/headware
No unusual hair colors or styles.
Beards and mustaches must be well groomed and clean.
No head coverings of any kind, unless dictated by your religion and approved by the instructor.

Jewelry/ornamentation (see MRI requirements)
No visible tattoos.
Discreet body piercings only unless dictated by religion and approved by the instructor.

No more than 2 earrings in each ear.
No rings EXCEPT wedding rings.
No dangling necklaces/earrings/pendants.
No necklaces longer than 18 inches.
No bracelets.

Conservative facial makeup.
Fingernails - well manicured, medium length, clear or natural unchipped polish may be worn. No artificial fingernails.

Nuclear Medicine The application of facial and lip cosmetics is strictly forbidden in nuclear medicine laboratories.

MRI Metallic objects, including some surgical placements, are forbidden in MRI laboratories.
Miscellaneous
- No perfume or aftershave is to be worn.
- No sunglasses are permitted.
- Name badge should be worn face up at all times.
- Students are expected to maintain personal hygiene consistent with affiliate expectations.
- No gum chewing during class or clinical rotations is allowed at any time.
- No cell phones during clinical hours
- No jackets will be permitted during clinical hours unless they are scrub jackets.
  Nuclear medicine students are required by federal regulations to wear appropriate lab coats during clinical rotations.

DURING CLASSROOM HOURS ONLY
No specific dress code beyond any established by the University has been established for students in the AMIT classroom. Students are urged to dress appropriately for the room temperature and in a manner that does not create a distraction. These may run either hot or cold and are often beyond the means of the faculty/staff to control. Program officials urge good taste in selection of wardrobe.
Collaborative Institutional Training Initiative (CITI)

AMIT students are required to complete annual research and ethics modules. These are to be completed through a multi-institutional research collaborative known as CITI training. You may access the weblink here:

https://www.citiprogram.org/enroll/courseregistration1.asp?language=english

1. Select Create an Account “Register”
2. Under “Participating Institutions” select Greater Cincinnati Academic and Regional Health Centers.
3. Continue to Step 2 Enter personal information
4. Continue to Step 3 Create a username & password (you are responsible for recalling these items)
5. Continue to Step 4 Enter personal information
6. Continue to Step 5
   a. Select “No” for CME/CEU
   b. Course Survey - select which you would prefer
7. Continue to Step 6 and enter personal information
   a. Your employee number is your M#
   b. What is your role in research – Select “Student Researcher – Undergraduate”
   c. Primary Institution – Select “University of Cincinnati”
8. Continue to Step 7
9. Login with username and password from above
   (if this does not automatically prompt you to login go to your email and click the link to be redirected you to login and verify your email address)
10. Select “Greater Cincinnati Academic and Regional Health Centers”
   a. “………… Complete enrollment”
      i. Question 3 – NO
      ii. Question 6 – YES
      iii. Question 9 – NO
      iv. Question 11 – NO
      v. Question 12 – YES
      vi. Question 13 – YES
      vii. Question 14 – NO
      viii. Question 15 – NO
      ix. Question 17 – YES
11. Select the correct course in your list (see below)
   a. **You do not have to complete all of the courses that are added to your username, only the course(s) listed below**
   b. Some courses may require prerequisite courses to be completed before you can complete the AMIT course requirements
If you leave the site and need to log back in, you do not need to complete the steps above, simply go to the website below and login:

https://www.citiprogram.org/default.asp?language=english

First year students must complete the following module(s):
   Students Research

Second year students must complete the following module(s):
   Academic and Regional Health Centers Core Curriculum
   Human Subjects Core Curriculum

**Students will submit the electronic Completion Reports showing the dates of completion.

You will not be permitted begin clinical rotations if this module has not been successfully completed.
Emergency Procedures
Guidelines for Students
Rev. 12-1-10

FIRE
All university buildings are equipped with automatic fire alarm systems. Many are equipped with voice systems that will give specific instructions, as well as automatic sprinkler systems. In the event that a fire alarm sounds, all persons are required, under state law, to evacuate the building immediately. Failure to evacuate is a criminal offense. Persons in charge of a facility (including faculty teaching class) are also responsible for evacuating their area, and may be held personally liable for a failure to evacuate. Once a fire alarm has sounded, do not re-enter a building until the all clear message has been given by emergency personnel.

Testing of the fire alarm system is normally conducted during hours the building is closed and is posted in advance. Any fire alarm that sounds must be treated as an actual alarm unless prior notice is given of the testing. When evacuating, take your personal belongings with you, and secure your office as you leave.

In the event of a fire or fire alarm, the student should take the following actions:
- Immediately exit the building via the nearest stairwell
- Exit the classroom or lab, verifying all visitors have left. Students shall not attempt to extinguish a fire
- Pull the fire alarm (located at each stairwell and main entrances)
- If possible, call 9-1-1 from a phone located a safe distance away from the building, to report the exact location of the fire
- Exit the building and await the fire department
- Do not re enter until you receive the all clear message from Public Safety

PHYSICAL DISABILITIES

Special Procedures are in place for persons with physical disabilities who may be present in a building during a fire. Persons with physical disabilities are permitted to stay in a building during an emergency situation only if they are non-ambulatory or where elevator assistance is essential for their evacuation and they are located either above or below the ground floor. Elevators cannot be used during a fire alarm. All other persons with disabilities need to evacuate the building in an emergency situation. If required, persons with a visual impairment should seek assistance from other occupants in the building. Many UC buildings are provided with designated Areas of Rescue Assistance for this situation. These areas are equipped for two-way voice communications with the 9-1-1 dispatcher, and are located within fire resistive areas of the building typically stairwells. The faculty members may want to check on the presence of these areas in order to assist a person with a physical disability in their class. For buildings where there are not designated Areas of Rescue Assistance, or if their presence is unknown, persons with disabilities should be instructed to seek a safe place (preferably a room with an exterior window, a telephone and a solid door), call 9-1-1 and report their location to the
dispatcher. The Fire Department will then determine if they need to provide evacuation assistance or if the caller should stay in place.

**SEVERE WEATHER**

The University has implemented a severe weather warning system as part of its ongoing fire and life safety systems upgrade. This system allows Public Safety to play prerecorded announcements in many of the campus buildings when severe weather threatens. This system will be used in conjunction with the existing Hamilton County siren warning system. The sirens effectively warn persons out of doors; however they do not provide good coverage indoors. The campus system delivers the warnings to persons inside the buildings, as well as providing more detailed instructions. The sirens and the campus system are activated for severe weather warnings only, not for watches.

Each building has a designated severe weather shelter area. These locations can be found at [http://www.uc.edu/content/dam/uc/publicsafety/docs/SHELTER_LOCATIONS.pdf](http://www.uc.edu/content/dam/uc/publicsafety/docs/SHELTER_LOCATIONS.pdf)

A severe thunderstorm WATCH indicates that conditions are favorable for the formation of a thunderstorm of 58 mph or greater. Hail with a diameter of ¾” or more may also be present. A severe thunderstorm WARNING is issued when severe thunderstorms have developed in the area. Shelter should be sought indoors, away from windows.

A tornado WATCH indicates that weather conditions are such that tornadoes can develop, as well as implying that thunderstorm activity may be severe. A tornado WARNING indicates that a tornado has actually been sighted in the reporting area. Immediate shelter should be taken in the lowest interior area of a building. Avoid long span roof areas (auditoriums and gymnasiums) and areas with large amounts of glass.

The Hamilton County warning sirens use a steady tone to indicate a severe weather warning (a rise fall tone is used for an attack warning). Both tones are tested on the first Wednesday of each month at 12 noon; unless there is threat of severe weather. The campus weather warning system will be tested at the same time of the day also on the first Wednesday of every month.

Should a severe weather WARNING be issued, faculty members should instruct their students to move to the severe weather shelter area of the buildings. In some cases (classrooms on lower levels with no exterior windows) it may not be necessary for the class to move. Everyone should review their class locations against the list of shelter areas (see above link in this section). Call the Fire Prevention Unit at 556-4992 if you have questions.

**SHELTER IN PLACE**

Several potential emergency situations that release hazardous materials into the air may result in local government issuing a “Shelter In Place” warning. These situations include chemical spills, fires, and chemical/biological attacks. Shelter in place means taking refuge inside a building and isolation yourself as much as possible from the outside air.
When a shelter in place warning is issued that affects the University of Cincinnati, an announcement will be made over the campus warning system. In buildings which are not part of the campus warning system, the warning will be issued via weather alert radio. The following steps should be taken upon hearing the shelter in place warning:

- Close outside windows and doors
- Turn off individual window air conditioners or fan units that bring in outside air
- Remain indoors and await further instructions or the all clear message

Faculty will keep students in the classroom/lab until the emergency is over, or until other instructions are given.

For students living in a Resident Hall, the actions are basically the same. All Resident Halls are part of the campus warning system, and will receive voice announcements. Residents should take the following steps upon hearing the shelter in place warning:

- Close outside windows and doors
- Turn off individual window air conditioners or fan units that bring in outside air (Dabney, Turner, and Schneider)
- Remain indoors and await further instructions or the all clear message

MEDICAL EMERGENCY

Should any person suffer a medical emergency, assistance can be summoned by calling 9-1-1. University Hospital provides a paramedic service to the UC main campuses, with back-up coverage from the Cincinnati Fire Department. Be sure to specify exactly where in the building the patient is located and if possible send someone to meet the paramedics at the main entrance.

THEFT

In the event that a student is the victim of a theft (or other non violent crime) contact the UC Police department at 556-1111.

WORKPLACE VIOLENCE & VIOLENT CRIME

Unfortunately, workplace violence and violent crimes do occur on university campuses, although rarely. UC has a training program available for interested departments. For information, contact the Crime Prevention Unit at 556-4900. Further information can be found at [http://www.uc.edu/publicsafety/police/CrimePrevention.html](http://www.uc.edu/publicsafety/police/CrimePrevention.html)

In the event that a violent event was to occur elsewhere in a building lock the classroom door and move out of the line of view of the door. Contact the police by calling 9-1-1 from a campus phone or 556-6111 from a cellular phone. Police personnel will provide further instructions on the building public address system.

Should a violent event occur in a classroom, if the suspect has fled, follow the same steps as above. If the suspect is still present, attempt to evacuate from the room. Call 9-1-1 as soon as possible. Be aware that 9-1-1 calls from campus phones are automatically identified, so if you cannot talk, police officers will be sent to investigate. At the present
time, there is no method of identifying where a cellular phone call is made, so you must be able to speak to summon assistance by cellular phone.

**BOMB THREATS & SUSPICIOUS PACKAGES**

If you should receive a bomb threat, a suspicious package, or locate a suspicious item, contact the Police Department immediately by calling 9-1-1 on a campus phone. DO NOT USE A CELL PHONE!! UC has training and information packages available regarding bomb threats and suspicious packages. For more information contact Crime Prevention at 556-4900 or [http://www.uc.edu/publicsafety.html](http://www.uc.edu/publicsafety.html)

If you receive a bomb threat write down exactly what is said as soon as possible. If you have a display phone, note the number that the call was received from.

If you receive a suspicious package or locate a suspicious item, do not move or open the item. Clear persons away from the immediate area and lock the area. Meet the responding police officers outside.

**ACTIVE SHOOTER**

*How to respond when there is an active shooter in your vicinity*

Quickly determine the most reasonable way to protect your own life. Remember that students and visitors are likely to follow the lead of faculty and staff during emergency situations.

1. **Evacuate**
   · Have an escape route and plan in mind, evacuate regardless whether others agree to follow or not
   · Leave your belongings behind
   · Follow the instructions of any police officers
2. **Hide Out**
   · Lock the door
   · Blockade the door with heavy furniture
   · Silence your cell phone
   · Remain quiet
3. **Take action against the active shooter**
   As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the active shooter by:
   · Acting as aggressively as possible against him/her
   · Throwing items and improvising weapons
   · Yelling
   · Committing to your actions
How to respond when law enforcement arrives

Law enforcement’s purpose is to stop the active shooter as soon as possible. Officers will proceed directly to the area in which the last shots were heard.

- Officers may wear regular patrol uniforms or external bulletproof vests, and helmets
- Officers may be armed with rifles, shotguns, handguns
- Officers may use pepper spray or tear gas to control the situation.
- Officers may shout commands and may order individuals to the ground for their safety

How to react when law enforcement arrives:

- Remain calm and follow officer’s instructions
- Put down any items in your hands (i.e., bags, jackets)
- Keep hands visible at all times
- Avoid making quick movements toward officers such as holding on to them for safety
- Exit in the direction the officers are entering the premises

http://www.ucblueash.edu/resources/safety/run-hide-fight.html

PHONE NUMBERS & WEB SITES

**Department of Public Safety**

- Emergency Dial 9-1-1 or 556-1111
- Non Emergency 556-4900
- Dispatcher 556-6111
- Crime Prevention 556-4900 (Workplace violence, theft, general info)
- Fire Prevention 556-4992 (Fire Safety, evacuations, severe weather)
- Emergency Planning 556-4900 (UC emergency plan, terrorism)

www.uc.edu/pubsafety

**Environmental Health & Safety** 556-4968

http://ehs2.uc.edu

**Radiation Safety** 558-4110

www.uc.edu/radsafety
MAGNETIC RESONANCE IMAGING PREGNANCY POLICY

It is the policy of the Magnetic Resonance Imaging section of the Advanced Medical Imaging Technology program at the University of Cincinnati to provide reasonable radio frequency protection to student technologists occupationally exposed to radio frequency. Pregnant students are expected to follow the recommendations of the ACR and the MRI department regarding pregnant health care practitioners as outlined in the ACR White Paper on Magnetic Resonance (MR) Safety and MRI Safety Policy for Pregnant Patients, Staff and Visitors.

ACR Pregnancy-Related Issues:

Pregnant health care practitioners are permitted to work in and around the MR environment throughout all stages of their pregnancy. Acceptable activities include, but are not limited to, positioning patients, scanning, archiving, injecting contrast, and entering the MR scan room in response to an emergency. Although permitted to work in and around the MR environment, pregnant health care practitioners are requested not to remain within the MR scanner bore or Zone IV during actual data acquisition or scanning.

ACR Guidance Document on MR Safe Practices: 2013:

AMIT MRI Safety Policy:

Pregnant staff and health care providers may enter the scan room when the static field is on, but should not remain in the room during the scan.

Upon medical verification of her pregnant condition, written disclosure of the said condition to program officials is the student’s responsibility and is to be initiated voluntarily. Students have the right to refuse disclosure of medical information; however, in the event that a student chooses not to disclose information regarding pregnancy, the student is acknowledging that they are assuming all responsibility for their condition and any potential complications that may arise.

Upon medical verification that a pregnancy exists, students have the following four (4) options:

**Option #1 - Elect not to disclose information regarding pregnant condition**

- By choosing this option, the student implies acknowledgement that she has chosen to disregard the recommendations made by the ACR and the Program and that she is assuming responsibility for all potential risks and related complications.

* No policy or performance exceptions will be allowed should the student choose this option.

**Option #2 – Elect to withdraw from the Advanced Medical Imaging Technology program.**

- By choosing this option, the student will withdraw from the program effective immediately and will be immediately removed from their current clinical rotation.

**Option #3 - Elect to continue in the Advanced Medical Imaging Program realizing that there may be possible restrictions implemented by my clinical sites.**

- If the student so decides, she may continue in the Program under the following conditions:
  - The student shall not remain in the scan room during actual data acquisition or scanning.
  - The student shall participate in all scheduled clinical rotation areas as assigned.
  - Absences due to pregnancy are governed by the Attendance and Medical Leave of Absences policy.

**Option #4 – Elect to continue in the Advanced Medical Imaging Program without any program modifications assuming all responsibility to you and your fetus’ health.**

- By choosing this option, the student implies acknowledgement that she has chosen to disregard the recommendations made by the ACR and the Program and that she is assuming responsibility for all potential risks and related complications.
PREGNANCY FORM – Magnetic Resonance Imaging

I the undersigned do hereby acknowledge that I have been counseled regarding the possible health risks to my unborn fetus and my option to either withdraw or continue in the program in full accordance with the Advanced Medical Imaging Technology Program written Magnetic Resonance Imaging Pregnancy Policy.

Below, I have indicated the option I choose to select:

_______ I elect to withdraw from the Advanced Medical Imaging Technology Program.

_____________________________     __________
Signature                       Date

_______ I elect to continue in the Advanced Medical Imaging Program realizing that there may be possible restrictions implemented by my clinical sites.

_____________________________     __________
Signature                       Date

_______ I elect to continue in the Advanced Medical Imaging Program without any program modifications assuming all responsibility to me and my fetus’ health.

_____________________________     __________
Signature                       Date

As the Clinical Coordinator, I have reviewed the possible health risks with the student and have confirmed her program withdraw or continuation as signed above

_____________________________     __________
Signature                       Date
Withdrawal of Declaration of Pregnancy

The student has the right to withdraw their declaration of pregnancy due to birth or other complications with pregnancy and must fill out this Withdrawal of Declaration of Pregnancy form. By filling out this form, the student acknowledges that their medical condition (i.e., pregnancy) no longer exists. All documentation shall be entered into the student’s permanent personal file.

I the undersigned do hereby acknowledge that by withdrawing my declaration of pregnancy I am no longer required to follow any clinical site restrictions related to pregnancy.

[Signature]       [Date]

I elect to withdraw my declaration of pregnancy from the Advanced Medical Imaging Technology Program.
Miscellaneous AMIT Program Policies

INCLEMENT WEATHER AND OTHER EMERGENCIES:

College of Allied Health Science Policy:

The University of Cincinnati is always officially open. During periods of severe inclement weather, public emergency or other crisis, the President or a designated cabinet officer may announce, through the UC emergency communication system, homepage, and the local news media, that some or all of the university's offices and facilities are closed for part or all of a workday.

As part of a comprehensive effort to inform its community of any emergencies that might arise on campus, the University of Cincinnati now offers an emergency text messaging service. Participation is voluntary. UC Public Safety will utilize the system at its discretion if there is an imminent threat to the safety and security of the campus community or to announce a weather-related university closing.

The university encourages students, faculty, and staff to sign up. You will need to provide your cell phone number and your cell carrier. Please note that international cell phone numbers will not currently work with the text messaging system.

The university will test the system each term to determine if it is working properly, but you will not receive non-emergency or advertising messages. UC will not sell the information. Normal text messaging rates apply; check your wireless plan to determine relevant charges.

Currently enrolled UC students can sign up or update their information by clicking on the “My Information” tab on the OneStop website. ([http://onestop.uc.edu](http://onestop.uc.edu))

Students and faculty are urged to exercise judgment in determining whether travel to class or a clinical site is hazardous. Students who choose not to attend class should notify their instructors as early as possible. Absences due to inclement weather will only be excused at the discretion of the instructor.

For clinical placements, the clinical area must be notified promptly by the appropriate person if students or faculty are going to be absent or late.

Faculty will notify students via email or Blackboard if they are unable to attend class or travel to clinical practice areas.

AMIT Clinical Rotation Policy:

AMIT clinical rotation hours will follow the UC severe inclement weather policy. Any official UC delays, closures, or early dismissals will be subtracted from your weekly clinical hour requirements.
**Classroom Attendance Policy:**

Classroom attendance and tardy policies are determined by each course instructor. Please see each course syllabus for additional information.

**Electronics Policy:**

All cell phones and pagers must be silenced before entering the classroom unless prior approval of the instructor is granted. Permission will be granted only under extenuating circumstances. Cell phones are **not** permitted during clinical rotation hours.

Each classroom instructor reserves the right to implement their own laptop/tablet policy within the classroom. Please see individual course syllabi for additional information.

**Non-Smoking Policy:**

The use of tobacco products, including cigarettes, cigars, pipes, chewing tobacco and snuff, on the AHC campus will be strictly prohibited.

This includes inside and outside all university-owned and leased AHC facilities, sidewalks, parking lots and green space. This also includes smoking while in vehicles on the AHC campus and in university-owned vehicles on and off the AHC campus at all times.

The Academic Health Center is not the only health facility implementing this new initiative. Nearly 20 other local hospitals, including University Hospital and other Health Alliance of Greater Cincinnati hospitals, Cincinnati Children's Hospital Medical Center and Cincinnati Shriners Hospital for Children, have recently enacted tobacco-free policies.

The university is offering education, information and cessation support to those immediately affected by this new policy through the UC Wellness Center. Those interested in learning more about available nicotine programs should call (513) 584-4457 or visit [www.uc.edu/uhs](http://www.uc.edu/uhs).

UC is also encouraging tobacco users interested in quitting to contact the state of Ohio's Tobacco Quit Line by calling (800) 943-4840 or visiting [www.standohio.org](http://www.standohio.org).

[http://healthnews.uc.edu/publications/findings/?4328/4338/](http://healthnews.uc.edu/publications/findings/?4328/4338/)

[http://www.uc.edu/hr/bewelluc/feelwell/tobaccofree.html](http://www.uc.edu/hr/bewelluc/feelwell/tobaccofree.html)

**Classroom Venipuncture Policy:**

All classroom venipuncture labs will be conducted in the form of simulation using mannequin arms. No venipuncture will be performed on instructor or peers within the classroom or AMIT lab.
Special Notes

Clinical Affiliate Protocols and Procedures
This Student Manual includes a great deal of information that the Advanced Medical Imaging Technology Student needs to know during their professional curriculum but it is not all-inclusive. Students may be rotating through numerous clinical affiliates. It is not unreasonable to assume that specific procedures will vary from institution to institution. Consequently, each student is REQUIRED to familiarize themselves with the methods of operation of each separate clinical affiliate.

STUDENTS ARE URGED TO PAY SPECIAL ATTENTION TO THE CORRECT MEANS OF RESPONDING TO EMERGENCY SITUATIONS AT EACH INDIVIDUAL CLINICAL AFFILIATE. AN IMPROPER RESPONSE MAY MEAN THE DIFFERENCE BETWEEN LIFE AND DEATH.

Several of the clinical sites have specific requirements the students must complete before beginning their rotation. These requirements include but are not limited to, background checks, online quizzes and immunization records. If you do not complete the requirements before the deadline established by the program and the clinical site, you will not be permitted to begin your clinical rotation. The student will be responsible for making up time missed at time and a half.

Grading
Grades are submitted each semester and are straightforward in their issuance. Some exceptions are as follows:

The grades for Directed Practice will be based upon technologists’ evaluation of the student’s clinical performance, meeting the minimum number of mandatory and elective clinical competencies, meeting the minimum number of mandatory clinical hours, and the completion of case studies. A minimum number of technologist evaluations each semester must be submitted before a final grade can be derived. The number and type of clinical competencies and clinical performances will be established by the individual program directors.

Due to the cumulative nature of our courses, any grade of "I" received for any professional curriculum course must be remedied before the end of the following semester. Unresolved grades of "I" will be converted to "F" and the student will be dropped from the AMIT program.

Should a student feel or notice that an incorrect grade was given, they should consult the faculty member giving the grade immediately. Should it turn out that the grade is incorrect, the instructor will submit a change of grade. However, if a student fails to bring the incorrect grade to the attention of the instructor before the end of the following semester, the grade will NOT be changed regardless of whether it is correct or not.
Student Technology Expectations
The personal computer has revolutionized the delivery of education at all levels. As such, the personal computer is an integral part of the education and communication of this department. Students are expected to have reasonable use and access to personal computers, Blackboard Class Web page, the internet, University of Cincinnati email, and University Library electronic resources.

Should the student not have a computer or be deprived of a computer due to malfunction or other reasons beyond their control, the student is still expected to gain computer, internet, and email access through friends, family, libraries, the college and university computer laboratories, or other resources.

A lack of access to these tools will not be an acceptable excuse for missed work, missed assignments, or missed communications.

Student Health
Immunization Records
You will need to provide medical records and begin your vaccination series with University Health Services

Please keep in mind that compliance with University Health Services is mandatory and is a requirement driven by the demands of our clinical sites. Students found to be not in compliance with University Health Services will not be able to attend clinical rotations and hence, will be dismissed from the program. All of this information must be submitted by August 31st. Keep a copy of all records turned into University Health. Many clinical sites will also ask for this information, and it is easier to keep copies than to try and get the information back from the office.

All University Health Services records information can be found online at the website link below. Each student will be supplied with a med+proctor login to upload their immunization records.
http://med.uc.edu/uhs/students/med-health-requirements

Second year students are not required to submit their immunization records again. However, second year students must submit an annual TB test (due August 31st) and flu vaccination (due November 14th) to University Health Services or they will be charged a tracking fee.

Flu Vaccination
All clinical sites require flu vaccinations for all employees and students. Should a student refuse to comply with this request, students may not be allowed to attend a certain clinical sites.
**CPR**
All students are required to maintain CPR certification throughout the program. If a student allows their CPR card to expire, they will not be allowed to continue clinical rotations until their certificate is renewed. Students will be required to make up clinical time at time and a half if this occurs. Depending upon the timing and the amount of time needing to be made up, it is possible that the student may not have the opportunity to make up the clinical time in time for advancement or graduation.

**Security Clearance**
National and state background checks are required to be completed yearly for all MRI and Nuclear Medicine students. For those entering the CT curriculum, a second background check for is currently not required but program officials reserve the right to amend this requirement without prior notice. You will need to go to the University’s Public Safety office, 4 Edwards Center on main campus, to complete the application. You will need to supply your Driver’s license, SSN, address and payment. As of this writing, the national background check costs $34 and the Ohio state background check is $32 and is subject to change. Your records will be available for pickup, within 24 hours of applying. If you have previous misdemeanor or felony charge/conviction against you, it may take longer for your background check to be available for pickup. **Background checks must be submitted to your instructor by September 12th.**

Nationally, there is a movement toward testing for the use of illicit drugs. It is possible that clinical sites may begin this requirement. Should this occur, students must comply with and meet the requirements of the drug testing policies established by the clinical site and the AMIT program. Drug screen can occur for a pre-clinical start requirement or a for-cause compliance.

**Previous convictions may affect board eligibility – Pre-application ethics reviews should be submitted to appropriate national boards to determine eligibility.** If you have a previous conviction or charge on your record it might be necessary to complete the pre-application review before taking your registry exams. We do not want any students to go through the entire year of a modality and then find they are not eligible to take their registry exam. Each registry has a varied review process; please see the links below:

Clinical Site Policies

Transportation Policy:

All students are required to have reliable transportation to and from their clinical site rotations. Shall a student’s transportation become unreliable it is the student’s responsibility to resolve the issue. The AMIT program cannot guarantee any rotation changes due to transportation issue.

Insurance Policy:

All AMIT students are covered under the University of Cincinnati’s professional insurance policy. Policy information is given to clinical sites upon request annually. In the event that a student needs a copy of this policy information please see the program clinical coordinator.

Accident Policy:

In the event of an accident at a clinical site facility, please notify the AMIT program clinical coordinator. All incidents will be handles individually with the program, the clinical affiliate and the student involved. All information regarding the accident will be kept confidential.

Needle stick Policy:

In the event of an accidental needle stick, please notify the AMIT program clinical coordinator. All incidents will be handles individually with the program, the clinical affiliate and the student involved. All information regarding the accident will be kept confidential.

Clinical Leave of Absence Policy: (military duty, jury duty, bereavement, vacation)

Students requesting an extended leave of absence will need to submit their request in writing to the AMIT program director. All efforts will be made to accommodate such request but cannot be guaranteed.

Non-Smoking Policy:

Student must abide by all individual clinical site smoking policies. This includes but is not limited to, cigarettes, e-cigarettes, marijuana, etc.

Venipuncture policy:

Students must abide by all individual clinical site venipuncture policies.
HIPAA Policy:

At no time are students to discuss patients or their conditions with anyone who is not involved with the patient’s care. All students must complete any and all HIPAA compliance training for their assigned clinical sites. Any student found not complying with HIPPA regulations could result in being removed from their clinical site and/or the AMIT program.
STUDENT LEAVE AUTHORIZATION

NAME __________________________________________________

TODAY’S DATE ___________ EFFECTIVE DATE ___________

Leave of absence for _______ days _______ hours

Reason for Absence:

________________________________________________________________
________________________________________________________________
________________________________________________________________

Time will be made up by:

________________________________________________________________
________________________________________________________________
________________________________________________________________

Documentation attached: YES_____ NO_____ 

________________________________________________________________

STUDENT’S SIGNATURE

________________________________________________________________

PROGRAM OFFICIAL’S SIGNATURE
ADVANCED MEDICAL IMAGING TECHNOLOGY
CLINICAL AFFILIATIONS

The Advanced Medical Imaging Technology Program has established clinical affiliation agreements throughout the Cincinnati Region. A sample of our sites include:


Children’s Hospital Medical Center* - [http://www.cincinnatichildrens.org/](http://www.cincinnatichildrens.org/)

The Christ Hospital - [http://www.thechristhospital.com/](http://www.thechristhospital.com/)

Dearborn County Hospital - [http://www.dch.org/](http://www.dch.org/)

Fort Hamilton Hospital - [http://www.ketteringhealth.org/forthamilton/](http://www.ketteringhealth.org/forthamilton/)


The Jewish Hospital - [http://www.jewishhospitalcincinnati.com/](http://www.jewishhospitalcincinnati.com/)


St. Elizabeth Medical Center* - [http://www.stelizabeth.com/](http://www.stelizabeth.com/)

University Hospital - [http://universityhospital.uchealth.com/](http://universityhospital.uchealth.com/)

Veteran's Administration Medical Center - [http://www.cincinnati.va.gov/](http://www.cincinnati.va.gov/)

An * indicates an affiliate with multiple sites.

This is a listing of the current clinical affiliates of the Advanced Medical Imaging Technology Program. Students will not rotate to every clinical site. The amount of time spent at each rotation may vary between individual sites. Site start times may vary between individual sites. Not all modalities go to every clinical site.
Fall Semester 2019

Classes begin Monday, August 26
Holiday: Labor Day Monday, September 2
Fall Reading Days (regular classes suspended; co-curricular activities continue) Thursday - Friday, October 10-11
Holiday: Veterans Day Monday, November 11
Holiday: Thanksgiving Weekend Thursday - Sunday, November 28 - December 1
Classes end Sunday, December 4
Examinations Monday - Saturday, December 9-14
Fall Semester ends Saturday, December 14
Commencement Saturday, December 14

Spring Semester 2020

Classes begin Monday, January 13
Holiday: Dr. Martin Luther King Jr.’s Birthday Monday, January 20
Spring Break Monday - Sunday, March 16-22
Classes end Friday, April 21
Examinations Saturday - Thursday, April 25-30
Spring Semester ends Thursday, April 30
Commencement Saturday, April 30 (unofficial)

Summer Semester 2020

Classes begin Monday, May 11
Holiday: Memorial Day Monday, May 25
Holiday: Independence Day Friday, July 3
Examinations Last class meeting
Summer Semester ends Saturday, August 8
University of Cincinnati Student Resources

Counseling & Psychological Services: http://www.uc.edu/counseling/services.html

Disability Services: http://www.uc.edu/aess/disability.html

Learning Assistance Center: http://www.uc.edu/aess/lac/resource.html

Student Wellness Center: http://www.uc.edu/wellness.html

UC Women’s Center: http://www.uc.edu/ucwc.html

LGBTQ Center: http://www.uc.edu/lgbtq.html

Veterans’ Programs & Services: http://www.uc.edu/aess/vps.html

Student Activities and Leadership Development: http://www.uc.edu/sald.html

Please note, this is not an all-inclusive list of UC student resources and services. Additional programs and services can be found: http://www.uc.edu/sa.html
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.

* The ASRT MRI Practice Standards complete document can be found: https://www.asrt.org/main/standards-regulations/practice-standards/practice-standards
MAGNETIC RESONANCE IMAGING
DIDACTIC AND CLINICAL
COMPETENCY REQUIREMENTS

Primary Pathway Eligibility Requirements Effective January 2014

Candidates for certification in Magnetic Resonance Imaging (MRI) through the primary pathway are required to meet the Professional Requirements specified in Article II of the ARRT Rules and Regulations. This document lists the didactic and clinical competency requirements for certification referenced in the Rules and Regulations. Candidates who complete a formal educational program accredited by a mechanism acceptable to the ARRT® will have obtained education and experience beyond the requirements specified here.

Didactic Requirements

Candidates must successfully complete coursework addressing the topics listed in the ARRT Content Specifications for the Examination in Magnetic Resonance Imaging. These topics may also be covered in curricula published by organizations such as the ASRT or SMRT.

Clinical Requirements

As part of their educational program, candidates must demonstrate competence in the clinical activities identified in this document. Demonstration of clinical competence means that the program director or designee has observed the candidate performing the procedure, and that the candidate performed the procedure independently, consistently, and effectively. Candidates must demonstrate competence in the areas listed below.

- Seven mandatory general patient care activities.
- Eight mandatory MRI safety requirements.
- Eighteen mandatory MRI procedures and ten electives to be selected from a list of 24 MRI procedures.
- Seven mandatory quality control tests.

Documentation

The following pages identify specific 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.

To document that the didactic and clinical requirements have been satisfied, candidates must have the program director (and authorized faculty member if required) sign the ENDORSEMENT SECTION of the Application for Certification included in the Certification Handbook.

* Note: Candidates who complete their educational program during 2014 or 2015 may use either the previous requirements (effective 2011) or the current requirements (effective 2014). Candidates who graduate after December 31, 2015 may no longer use the previous requirements.

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MRI Clinical Competency Requirements

The clinical competency requirements include the general patient care activities listed below, and the MRI procedures and quality control procedures listed on subsequent pages. Demonstration of competence should include variations in patient characteristics (e.g., age, gender, medical condition).

1. General Patient Care

   **Requirement:** Candidates must demonstrate competence in the seven patient care activities listed below. These activities should be performed on patients; however, simulation* is acceptable if state or institutional regulations prohibit candidates from performing the procedure on patients.

<table>
<thead>
<tr>
<th>General Patient Care</th>
<th>Date Completed</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vital signs (blood pressure, pulse, respiration, temperature)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterile technique</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (Universal) Precautions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer of patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care of patient medical equipment (e.g., oxygen tank, IV tubing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venipuncture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The ARRT requirements specify that certain clinical procedures may be simulated. Simulations must meet the following criteria: (a) the student is required to competently demonstrate skills as similar as circumstances permit to the cognitive, psychomotor, and affective skills required in the clinical setting; (b) the program director is confident that the skills required to competently perform the simulated task will generalize or transfer to the clinical setting, and, if applicable, the student will evaluate related images. Examples of acceptable simulation include: demonstrating CPR on a mannequin and performing venipuncture by demonstrating aseptic technique on another person, but then inserting the needle into an artificial forearm or grapefruit.
2. MRI Safety Requirements

Requirement: Candidates must demonstrate competence in the eight areas of MRI Safety listed below.

<table>
<thead>
<tr>
<th>MRI Safety Requirements</th>
<th>Date Completed</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening patients, personnel, and non-personnel for MRI safe, conditional, and unsafe devices and objects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify MRI safety zones</td>
<td></td>
<td></td>
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<tr>
<td>Static field (e.g., projectiles)</td>
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<td></td>
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<tr>
<td>Radiofrequency field (e.g., thermal loading, coil positioning, patient positioning, and insulation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-varying gradient magnetic fields (e.g., induced voltages, auditory considerations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication and monitoring considerations (e.g., sedated patients, verbal and visual contact, vital signs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrast media safety (e.g., NSF, renal function)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other MRI safety considerations (e.g., cryogen safety, fire, medical emergencies, laser alignment lights)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. MRI Procedures

Requirement: Candidates must demonstrate competence in the 18 mandatory procedures listed in the following table. For the mandatory procedures, candidates must be evaluated while scanning actual patients. Candidates are also required to demonstrate competence for 10 of 24 elective procedures. Elective procedures should be performed on patients; however, up to one-half 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 the MRI procedures the candidate must demonstrate appropriate:

- patient care skills including: evaluation of requisition or medical record; patient identification; documentation of patient history including allergies; safety screening; patient assessment; explanation of procedure; appropriate MRI safety procedures; and patient discharge with post-procedure instructions.

- technical and procedural skills including: selection of imaging coil; patient positioning; protocol selection; parameter selection; image display; filming (if applicable); networking; archiving; and documentation of procedure and patient data in appropriate records.

- evaluation skills including: analysis of the image for technical quality; demonstration of correct anatomic regions; recognition of relevant pathology; and proper labeling.
# Magnetic Resonance Imaging
Clinical Competence Requirements

<table>
<thead>
<tr>
<th>MRI Procedures</th>
<th>Mandatory or Elective</th>
<th>Date Completed</th>
<th>Patient or Simulated</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Head and Neck</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>brain</td>
<td>M</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IAC</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>orbit</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pituitary</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>head MRA</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>face/soft tissue neck (e.g., parotids, thyroid)</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>neck MRA</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Spine</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>cervical</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thoracic</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lumbar</td>
<td>M</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>sacrum/coccyx</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>brachial plexus</td>
<td>E</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Thorax</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chest</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>breast</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thoracic MRA</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Abdomen and Pelvis</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>abdomen</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRCP</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>abdominal MRA</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male pelvis</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>female pelvis</td>
<td>M</td>
<td></td>
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<tr>
<td><strong>Musculoskeletal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>elbow</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hand/wrist</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>finger/thumb</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRI Procedures</td>
<td>Mandatory or Elective</td>
<td>Date Completed</td>
<td>Patient or Simulated</td>
<td>Competence Verified By</td>
</tr>
<tr>
<td>------------------------</td>
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<tr>
<td>hip</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bony pelvis</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SI joints</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ankle/hind foot</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shoulder</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>scapula</td>
<td>E</td>
<td></td>
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<tr>
<td>sternum/SC</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fore foot</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>humerus</td>
<td>E</td>
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<td></td>
<td></td>
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<tr>
<td>forearm</td>
<td>E</td>
<td></td>
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<tr>
<td>femur</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lower leg</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knee</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>temporomandibular joint</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MR arthrography</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special Imaging Procedures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRV</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>image post-processing</td>
<td>M</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>extremity MR angiography</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>spectroscopy</td>
<td>E</td>
<td></td>
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</tr>
</tbody>
</table>
4. Quality Control Procedures

*Requirement:* Candidates must demonstrate competence in the quality control activities listed below. The first four procedures are performed on a QC phantom.

<table>
<thead>
<tr>
<th>Quality Control Procedures</th>
<th>Date Completed</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td>signal to noise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>center frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>transmitter gain or attenuation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>geometric accuracy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equipment inspection (e.g., coils, cables, door seals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>monitor cryogen levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>room temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category and Procedure</td>
<td>Date Performed</td>
<td>Time of Day</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head and Neck</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orbit</td>
<td>01/01/2010</td>
<td>4:15 pm</td>
</tr>
<tr>
<td>Orbit</td>
<td>01/02/2010</td>
<td>2:30 pm</td>
</tr>
<tr>
<td>Orbit</td>
<td>01/03/2010</td>
<td>12:00 pm</td>
</tr>
</tbody>
</table>
# MRI Clinical Time Sheet

**Student Name __________________________**  **Academic Semester/Year __________**

**Week of __________________________**  **Clinical Site _____________________**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Time In</th>
<th>Technologist’s Initials</th>
<th>Time Out</th>
<th>Total Hours</th>
<th>Technologist’s Initials</th>
<th>Lunch</th>
<th>Sent Home Early</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**

Technologist’s signature ____________________________________________

Student’s signature ________________________________________________

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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>N/A</th>
<th>Does the student dress appropriately and according to UC’s uniform policy? Is the student punctual?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student get along well with staff/communicate well with physicians?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student take constructive criticism well?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student seek guidance about things he/she doesn’t understand?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student have enthusiasm to learn?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>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?)</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student assist in stocking scan room and help in maintaining the equipment?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student select the correct coils, protocols, sequences, and parameters for the exam?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Is the student interested in helping with exams?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student properly evaluate the requisition and/or medical records?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student obtain necessary information before beginning an exam with regard to patient history/MR screening/patient ID?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student explain the procedure to patients prior to scan?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student demonstrate appropriate knowledge in image display, filming, and archiving?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student employ proper MRI safety procedures and precautions?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student employ Universal Precautions when necessary?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student evaluate the resulting images for image quality?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student evaluate the resulting images for optimal demonstration of anatomic region?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student evaluate the resulting images for proper identification on images and patient data?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student evaluate the resulting images for exam completeness?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student assist the patient in dressing/undressing/help onto MR scanner table as necessary?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does student prepare scan room and position the patient properly?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student show technical proficiency?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student show technical knowledge?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>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.)</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Is the student discreet about asking questions in front of the patient?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student explain the procedure to the patient to make the patient more comfortable?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student refrain from inappropriate patient communication?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Is the student courteous to patients?</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>N/A</td>
<td>Does the student make good use of his/her time?</td>
</tr>
</tbody>
</table>
What are the strengths of this student?

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

Areas for improvement?

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

Any other comments?

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

Technologist signature ________________________________  Date______________________
Student Evaluation of Clinical Site

Student Name _________________________             Date ________________
Clinical Site ________________________
Dates from _____________________    to _____________________

Circle the answer that best describes your feelings for the following questions.

Was this site     Too Slow             Just Right                 Too Busy?
Comments ____________________________________________________________

Were the technologists helpful?            Yes      No
Comments ____________________________________________________________

Were the physicians helpful?   Yes    No
Comments ____________________________________________________________

Was the technologist-student relationship           Good            Bad
Comments ____________________________________________________________

Would you recommend this site again?            Yes              No
Comments ____________________________________________________________
MRI Physics Individual 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 otherwise see 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

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient history (patient’s medical history)</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Clinical signs and symptoms/Primary diagnosis(reason for MR exam)</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Lab values and other data vs. Normal values (if applicable)</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Correlation with other imaging modalities and testing (if patient had prev. exams)</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Correlation with previous MRI examination (if applicable)</td>
<td>4 3 2 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation of MR protocol/Techniques/MR scanner type and field strength</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>MR image clarity and explanation</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Identification of anatomy and pathology (from x-rays, MR, CT, etc.)</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Organization of presentation</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Communication/presentation skills</td>
<td>4 3 2 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusion</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiologist’s report included and discussed.</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Treatment of patient (if available). If not, discuss treatment in general for topic</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Prognosis of patient (if available)</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Knowledge of anatomy/pathology/physiology as it pertains to specific topic.</td>
<td>4 3 2 1</td>
</tr>
<tr>
<td>Resources (at least 3)</td>
<td>4 3 2 1</td>
</tr>
</tbody>
</table>

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. Name badge should be worn at all times.

6. No unusual hair colors or styles.

7. No visible tattoos.

8. 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.

9. Conservative face makeup.

10. Only rings permitted are wedding rings.

11. No artificial fingernails. Nails must be free of polish, or polish must be free of chips.

12. No perfume or aftershave is to be worn.

13. Beards and mustaches must be well groomed and clean.

14. No necklaces or bracelets.

15. No sunglasses are permitted.

16. No head coverings of any type unless dictated by your religion and approved by the instructor.

17. No bobby pins or hair clips.

** Additions to this policy may be made at the discretion of the instructor as situations arise.
# Magnetic Resonance (MR) Environment Screening Form for Individuals*

The MR system has 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.

*NOTE: If you are a patient preparing to undergo an MR examination, you are required to fill out a different form.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>month/day/year</td>
<td>Last Name</td>
<td>First Name</td>
</tr>
<tr>
<td>Address</td>
<td>Telephone (home) (___) <strong><strong><strong>-</strong></strong></strong></td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>Telephone (work) (___) <strong><strong><strong>-</strong></strong></strong></td>
<td></td>
</tr>
<tr>
<td>State Zip Code</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Have you had prior surgery or an operation (e.g., arthroscopy, endoscopy, etc.) of any kind? [ ] No [ ] Yes
   If yes, please indicate date and type of surgery: Date ____/____/____ Type of surgery ______

2. Have you had an injury to the eye involving a metallic object (e.g., metallic slivers, foreign body)? [ ] No [ ] Yes
   If yes, please describe: __________________________

3. Have you ever been injured by a metallic object or foreign body (e.g., BB, bullet, shrapnel, etc.)? [ ] No [ ] Yes
   If yes, please describe: __________________________

4. Are you pregnant or suspect that you are pregnant? [ ] No [ ] Yes

**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:

- [ ] Yes [ ] No Aneurysm clip(s)
- [ ] Yes [ ] No Cardiac pacemaker
- [ ] Yes [ ] No Implanted cardioverter defibrillator (ICD)
- [ ] Yes [ ] No Electronic implant or device
- [ ] Yes [ ] No Magnetically-activated implant or device
- [ ] Yes [ ] No Neurostimulation system
- [ ] Yes [ ] No Spinal cord stimulator
- [ ] Yes [ ] No Cochlear implant or implanted hearing aid
- [ ] Yes [ ] No Insulin or infusion pump
- [ ] Yes [ ] No Implanted drug infusion device
- [ ] Yes [ ] No Any type of prosthesis or implant
- [ ] Yes [ ] No Artificial or prosthetic limb
- [ ] Yes [ ] No Any metallic fragment or foreign body
- [ ] Yes [ ] No Any external or internal metallic object
- [ ] Yes [ ] No Hearing aid
- [ ] Yes [ ] No Other implant __________________________
- [ ] Yes [ ] No Other 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 the MRI Technologist or Radiologist if you have any question or concern BEFORE you enter the MR system room.

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 of Person Completing Form: ___________________________ Date ___/___/_____

Form Information Reviewed By: ___________________________ Signature: ___________________________

[ ] MRI Technologist [ ] Radiologist [ ] Other ___________________________
AMIT MRI Section Student Checklist Form

1. Review and understand Specific Procedural Requirements.
2. Review and understand General Guidelines.
4. Magnetic Resonance Imaging Clinical Mandatory/Elective Competence Form - This form is a guideline of the required competences for MRI.
5. Magnetic Resonance Imaging Clinical Experience Requirement Procedures Verification Form (On Blackboard). Keep these forms with you during your clinical rotations, at the end of each semester; you will need to turn these forms into the AMIT Program. Give the copy to the AMIT MRI Program Director and retain the original copy for your records. Use the same copy of form for the entire year.
6. MRI Clinical Time Sheet – to be completed daily. Submit a copy of your time sheet at the end of EACH week and retain the original copy for your records. Time sheets are due no later than the following Monday.
7. MRI Clinical Evaluation Report Form is for any MRI Technologist whom you work with frequently. You are required to have at least 2 MRI Technologist complete an evaluation per semester. It is recommended that you receive an evaluation half way through the semester and one at the end of the semester to gauge your progress. Scores will be averaged to determine a percentage of your semester grade. Submit the original copy of your completed evaluation form/s, via fax or enclosed in a signed sealed envelope, at the end of EACH semester.
8. Student Evaluation of MRI Clinical Site Form – complete one evaluation of your clinical site per rotation.
9. Review and understand the MRI Physics Individual Case Study Presentation Form Rubric. You will use this assessment rubric when completing case study assignments.
10. Review and understand the information in the MRI Clinical Uniform section.
11. Complete the University of Cincinnati AMIT MRI Student MRI Screening Questionnaire Form. Fill form out and make TWO copies. Return original, completed form to AMIT MRI Program Director. Give ONE copy to Clinical Site Supervisor upon entering MRI clinical site, and retain ONE copy for your student records. If you have more than one clinical rotation, you MUST complete another form and return original, completed form to AMIT MRI Program Director. Give ONE copy to Clinical Site Supervisor upon entering MRI clinical site, and retain ONE copy for your student records.
12. Read, understand, and sign this form. Give the original copy to the AMIT MRI Program Director. You will then get a copy of this signed form for your records.

☐ I have read and understand all the information within this AMIT MRI Section Student Checklist Form.

Print Student Name ________________________________
Student Signature ________________________________
Date ________________________________
Student Contract
Advanced Medical Imaging Technology Program

I have read the Advanced Medical Imaging Technology Student Handbook, the University of Cincinnati Student Code of Conduct, and the professional codes of conduct and ethics. I agree to the rules, regulations and standards set forth by the Advanced Medical Imaging Technology Program, the College of Allied Health Sciences, and the University of Cincinnati. I understand that failure to comply with Program, College, and University rules and regulations have a negative consequence and may include my expulsion from the program. Furthermore, I understand that failure to comply with professional codes of conduct and ethics may render me ineligible for nationally administered board examinations.

I understand that I must read and understand this document, the University of Cincinnati Student Code of Conduct, and the professional codes of conduct and ethics before I will be allowed to participate in my clinical education. Faculty will answer questions I have regarding their content.

Furthermore, I agree to be timely for class and clinical rotations, will do what is asked of me to the best of my abilities, and I will take charge of both my clinical and classroom education. This includes but is not limited to making sure correct grades are submitted for each course, courses needed for graduation are completed with the grades submitted to the Registrar’s Office, and proper paperwork is submitted in a timely manner.

I will prepare myself to the best of my abilities for the nationally administered board examinations of the modalities I have chosen/been assigned. I will complete all tasks necessary to obtain board eligibility in each modality I pursue.

In return for my compliance to the rules and regulations set forth in this document, I understand that the faculty and staff of the Advanced Medical Imaging Technology Program will provide the training and education necessary to prepare oneself for the nationally administered board examinations.

My signature below affirms my complete understanding of this document and I agree to abide by the rules as set forth by this program.

____________________________________________________  __________
Signature                                                Date

_______________________________________________________
Print Name
Course Number: AMIT 4004
Credit Hours: 4.0
Time: M 1:20pm-2:10pm/W 10:10-12pm – 207 French East
Instructor: Barry Southers, M.Ed, RT(R)(MR)
Office: 215 French East
Barry.Southers@uc.edu
513.558.7415
Required Text: No text is required

Course Description: This is the first in a sequence of three courses discussing the diagnostic uses of Magnetic Resonance Imaging. This course will emphasize the human central nervous system (brain and spine) anatomy as seen in multiple orthogonal planes. distinctions between normal and abnormal with respect to anatomy and physiology will be determined. Patient care aspects will also be discussed.

Course Objectives:
- Upon successful completion of this course, students will be able to:
- Identify anatomical structures of the central nervous system as seen in multiple orthogonal planes on MR images.
- Describe gross anatomic and physiologic relationships of the central nervous system.
- Describe the anterior-posterior, proximal-distal and lateral-medial relationships with central nervous system anatomy.
- Distinguish between routine, normal central nervous system findings and findings that are associated with disease or injury.
- Implement magnetic resonance imaging procedures, sequences, and parameters to optimize visualization of the central nervous system.

Grading procedures: All tests are 100 points and count equally in value. Pop quizzes and assignments are worth a total of 50 points also. Case study presentation is worth 150 points.
Test #1: 100 points
Test #2: 100 points
Test #3: 100 points
Test #4: 100 points
MR Imaging Anatomical Overview Assignments (2): 100 points each, 200 total:
Quizzes/Assignments/Class Participation: 50 points
Total course points: 650

Grading schema:
**Examinations:** All examinations will be given online via Blackboard; therefore laptop computers are required on all examination days. Please ensure your laptop battery is functional and charged as there will be a 10% deduction in overall score for missing an examination due to not being prepared. Further, a 10% deduction will be imposed on all missed examinations unless a signed physician’s excuse is provided.

**Make-up Examinations:**

****Tests missed, due to absence, **must** be made up within a 6-day period following the time that the originally scheduled test was administered. **Failure to make up a test within this timeframe will result in a score of “0” for that test!** Make-up tests will be administered at the University of Cincinnati French Hall East, Room 215, at a time agreed upon by the class instructor.****

**Cell phone Policy / Academic Integrity:** Anyone having a ringing cell phone, or looking at a cell phone **during a test,** will have their test confiscated, and will receive a score of “0” on that test. Academic integrity will not be compromised in this class! Anyone caught cheating will be removed from this class, and subsequently reported to the program director for further discipline, up to and including expulsion.

**Instructor Attendance Policy:** In the event that the instructor must miss a class period, notification will be attempted through Blackboard, at least one hour prior to the beginning of the scheduled class period. This will be posted as an announcement under the class heading. **Please make it a habit to check Blackboard prior to the start of class, if at all possible.**

**Students with Disabilities and Student Services:**
Students requesting accommodation for disability or health reasons are responsible for notifying the instructor by the end of the first week of the quarter to discuss specific needs. Self-
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<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
<th>READINGS</th>
<th>OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M August 27, 2018</td>
<td><strong>ORIENTATION</strong></td>
<td></td>
<td><strong>ORIENTATION</strong></td>
</tr>
<tr>
<td>W August 29, 2018</td>
<td>Syllabus, Meet and greet, 1st Week in MRI</td>
<td>LECTURES</td>
<td>Syllabus, Meet and greet, Your First Week in MRI lecture</td>
</tr>
<tr>
<td>M September 3, 2018</td>
<td><strong>NO CLASS</strong></td>
<td></td>
<td><strong>NO CLASS – LABOR DAY</strong></td>
</tr>
<tr>
<td>W September 5, 2018</td>
<td>MRI Anatomy Overview</td>
<td>LECTURES</td>
<td>MRI Anatomy Overview</td>
</tr>
<tr>
<td>M September 10, 2018</td>
<td>Patient care overview</td>
<td></td>
<td>Body planes and terms</td>
</tr>
<tr>
<td>W September 12, 2018</td>
<td>Patient care overview</td>
<td>LECTURES</td>
<td>Patient care overview</td>
</tr>
<tr>
<td>M September 17, 2018</td>
<td>Patient care overview</td>
<td>GUEST LECTURE</td>
<td>Patient care overview/Legal Issues</td>
</tr>
<tr>
<td>W September 19, 2018</td>
<td>Patient care overview</td>
<td>GUEST LECTURE</td>
<td>10am: DICOM/PACS, data/image transfer</td>
</tr>
<tr>
<td>M September 24, 2018</td>
<td></td>
<td></td>
<td>Intro to Clinical MRI</td>
</tr>
<tr>
<td>W September 26, 2018</td>
<td>Patient care overview</td>
<td>LECTURES</td>
<td>Class in Health Sciences Library</td>
</tr>
<tr>
<td>M October 1, 2018</td>
<td>LIBRARY CLASS</td>
<td>LECTURES</td>
<td>MRI Brain anatomy/imaging</td>
</tr>
<tr>
<td>W October 3, 2018</td>
<td>MRI Brain</td>
<td>LECTURES</td>
<td>MRI Brain anatomy/imaging</td>
</tr>
<tr>
<td>M October 8, 2018</td>
<td>MRI Brain</td>
<td>LECTURES</td>
<td>MRI Brain anatomy/imaging</td>
</tr>
<tr>
<td>W October 10, 2018</td>
<td>MRI Brain</td>
<td>LECTURES</td>
<td>MRI Brain anatomy/imaging</td>
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<tr>
<td>M October 15, 2018</td>
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<td>W October 17, 2018</td>
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<tr>
<td>M October 22, 2018</td>
<td>EXAM 1</td>
<td></td>
<td>EXAM 1 – BRAIN ANAT/IMAGING</td>
</tr>
<tr>
<td>W October 24, 2018</td>
<td>MRI Brain</td>
<td>LECTURES</td>
<td>MRI Brain pathology</td>
</tr>
<tr>
<td>M October 29, 2018</td>
<td>MRI Brain</td>
<td>LECTURES</td>
<td>MRI Brain pathology</td>
</tr>
<tr>
<td>W October 31, 2018</td>
<td>MR Imaging Anatomical Overview Assignment – BRAIN</td>
<td>LECTURES</td>
<td>MR Imaging Anatomical Overview Assignment – BRAIN</td>
</tr>
<tr>
<td>M November 5, 2018</td>
<td>MRI Spine</td>
<td>LECTURES</td>
<td>MRI Spine anatomy/imaging</td>
</tr>
<tr>
<td>W November 7, 2018</td>
<td>MRI Spine</td>
<td>LECTURES</td>
<td>MRI Spine anatomy/imaging</td>
</tr>
<tr>
<td>M November 12, 2018</td>
<td>MRI Spine</td>
<td>LECTURES</td>
<td>MRI Spine anatomy/imaging</td>
</tr>
<tr>
<td>W November 14, 2018</td>
<td>EXAM 3</td>
<td></td>
<td>EXAM 3 – SPINE ANAT/IMAGING</td>
</tr>
<tr>
<td>M November 19, 2018</td>
<td></td>
<td></td>
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<tr>
<td>W November 21, 2018</td>
<td>MRI Spine</td>
<td>LECTURES</td>
<td>MRI Spine pathology</td>
</tr>
<tr>
<td>M November 26, 2018</td>
<td>MRI Spine</td>
<td>LECTURES</td>
<td>MRI Spine pathology</td>
</tr>
<tr>
<td>W November 28, 2018</td>
<td>EXAM 4</td>
<td></td>
<td>EXAM 4 – SPINE PATHOLOGY</td>
</tr>
<tr>
<td>M December 3, 2018</td>
<td><strong>Case Study Presentations (FOR PHYSICS CLASS)</strong></td>
<td>LECTURES</td>
<td>Case Study Presentations (FOR PHYSICS CLASS)</td>
</tr>
<tr>
<td>W December 5, 2018</td>
<td>MR Imaging Anatomical Overview Assignment – SPINE</td>
<td>LECTURES</td>
<td>MR Imaging Anatomical Overview Assignment – SPINE</td>
</tr>
</tbody>
</table>

69
MRI PHYSICS AND INSTRUMENTATION I
Autumn Semester 2018-19

Course Number: AMIT 4007
Credit Hours: 3.0
Time: Monday 10:10am-12:50pm – 207 French East
Instructor: Barry Southers, M.Ed, RT(R)(MR)
Office: 215 French East
Barry.Southers@uc.edu
513.558.7415


Course Description: This course is the first in a sequence of three courses on Magnetic Resonance Imaging Physics and Instrumentation. This course will study the physical principles, instrumentation and concepts of MRI, including the study of MRI safety, patient screening and patient care issues associated with the function of the scanner.

Course Objectives:
Upon successful completion of this course, students will be able to:
- Administer proper safety measures for the MRI environment
- Demonstrate tactics for dealing with claustrophobic patients.
- Differentiate between different types of MR scanners and be able to discuss the capabilities of various scanners.
- Distinguish the various physical principles of MRI that result in image acquisition
- Identify pulse sequences used in various MRI procedures and recognize various MR-weighted images.
- Identify MR instrumentation used in MR imaging.
- Analyze MR parameters used in image acquisition.
- Describe the atomic structure of hydrogen and its relevance to proton alignment, precession and imaging.

Attendance Policy:
Your attendance in every class period is extremely important because of your professional experience that you bring to the classroom and contribute to the learning environment. As in any work situation, your absence will affect those with whom you work. Attendance requires alert participation.
Students entering the classroom after 10 minutes will have one percentage point subtracted from their final grade for each infraction. Students missing class will have three percentage points subtracted from their final grade for each infraction.
Only events such as funerals or personal illness accompanied by a physician’s note upon return are considered to be an excused absence.

EXAMPLE:
Final grade after examinations: 93% (A-)

70
Your career requires manners, effective communication skills, the ability to solve problems, and to articulate these solutions to others in a professional manner. It is important that you be open to new ideas and different opinions. In order to facilitate the development of these skills, please be respectful of others by arriving to class on time, staying for the entire class period, and turning off & stowing away cell phones and beepers.

**Students with Disabilities and Student Services:**
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**Class Assignments and Activities:**
Projects, assignments, quizzes, examinations, and guest speakers, field trips, and journal articles may be utilized within the course. Assignments with due dates and quizzes/examinations with specific dates will be communicated on this syllabus and on Blackboard. Note that any dates on the syllabus are subject to change and it is your responsibility to check Blackboard, with another student, or the Instructor if you miss class or are unaware of any change.

**Grading Procedures:**

*Evaluation*

- Quizzes (3) – 150 points
- Four Examinations – 400 points (100 points each)
- Case Study Presentation – 150 points

**Total Points: 700**
Grading Schema:

<table>
<thead>
<tr>
<th>Grades Scored Between</th>
<th>Will Equal</th>
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</thead>
<tbody>
<tr>
<td>95 % and 100</td>
<td>A</td>
</tr>
<tr>
<td>93 % and Less Than 95</td>
<td>A-</td>
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<tr>
<td>90 % and Less Than 93</td>
<td>B+</td>
</tr>
<tr>
<td>88 % and Less Than 88</td>
<td>B</td>
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<tr>
<td>83 % and Less Than 85</td>
<td>B-</td>
</tr>
<tr>
<td>78 % and Less Than 83</td>
<td>C+</td>
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<tr>
<td>75 % and Less Than 78</td>
<td>C</td>
</tr>
<tr>
<td>73 % and Less Than 75</td>
<td>C-</td>
</tr>
<tr>
<td>68 % and Less Than 73</td>
<td>D+</td>
</tr>
<tr>
<td>65 % and Less Than 68</td>
<td>D</td>
</tr>
<tr>
<td>63 % and Less Than 65</td>
<td>D-</td>
</tr>
<tr>
<td>0 % and Less Than 53</td>
<td>F</td>
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</table>

Quizzes – 150 points
Three quizzes which are worth 50 points each. They will be given the first 20 minutes of class.

Examinations – 400 points
Four Examinations which are worth 100 points each.

Examinations and Quizzes:
All quizzes and examinations will be given online via Blackboard; therefore laptop computers are required on all examination and quiz days. Please ensure your laptop battery is functional and charged as there will be a 10% deduction in overall score for missing an examination due to not being prepared. Further, a 10% deduction will be imposed on all missed examinations unless a signed physician’s excuse is provided. Finally, a 5-point deduction will be imposed for each day an online quiz/exam is not completed beyond the due date.

Individual Case Study: This is an individual case study project that will be worth 150 points. This project will involve selecting a complete MRI exam and thoroughly evaluating and presenting it to the class via a PowerPoint presentation. Please use the assigned rubric to complete all requirements of the case study. You will need to cover and properly tie in: patient
history, diagnosis, MRI sequences, MRI parameters, benefits and necessity of contrast agent if used in the examination, along with all other aspects in the rubric. Be sure to give reasons why the selected sequences and parameters were used in the examination, as well as including images from the examination if possible. **Be sure to delete any and all patient information, as using this would be a serious HIPAA violation.** The total presentation should be no less than 15 minutes and no more than 20 minutes in length.

**Electronic Communication Policy:**
It is expected that students will check their email accounts, Blackboard announcements, and Blackboard discussion boards at least twice per week for possible announcements and discussion regarding the class. Please be sure to use only appropriate language in your communication and to sign your name on all emails.

****Tests missed, due to absence, **must** be made up within a 6-day period following the time that the originally scheduled test was administered. **Failure to make up a test within this timeframe will result in a score of “0” for that test!** Make-up tests will be administered at the University of Cincinnati French Hall East, Room 215, at a time agreed upon by the class instructor.****

**Academic Integrity:**
The work that you submit in this course is expected to be the result of your individual effort only. The use of a computer in no way modifies the standards of academic integrity expected under the University Code. The University Rules, including the Student Code of Conduct, and other documented policies of the department, college, and university related to academic integrity will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct. Please make sure that you behavior is conducive to the academic mission of this program and institution.
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<tr>
<td>August 27, 2018</td>
<td>ORIENTATION</td>
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<tr>
<td>September 3, 2018</td>
<td>NO CLASS</td>
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<td>NO CLASS – LABOR DAY</td>
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<tr>
<td>September 10, 2018</td>
<td>MRI Safety I</td>
<td>LECTURES/SAFETY ARTICLES</td>
<td>MRI Safety I</td>
</tr>
<tr>
<td>September 17, 2018</td>
<td>Quiz 1; MRI Basics I</td>
<td>LECTURES</td>
<td>Instrumentation, Basic physical principles</td>
</tr>
<tr>
<td>September 24, 2018</td>
<td>EXAM 1</td>
<td></td>
<td>EXAM 1</td>
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<td>October 1, 2018</td>
<td>Library class</td>
<td></td>
<td>At Health Sciences Library</td>
</tr>
<tr>
<td>October 8, 2018</td>
<td>MRI Basics II</td>
<td>LECTURES</td>
<td>Parameters</td>
</tr>
<tr>
<td>October 15, 2018</td>
<td>Quiz 2; MRI Basics III</td>
<td>LECTURES</td>
<td>Parameters</td>
</tr>
<tr>
<td>October 22, 2018</td>
<td>MRI Safety II &amp; III</td>
<td>LECTURES/SAFETY ARTICLES</td>
<td>MRI safety</td>
</tr>
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<td>October 29, 2018</td>
<td>MRI Basics IV</td>
<td>LECTURES</td>
<td>MRI Basics IV</td>
</tr>
<tr>
<td>November 5, 2018</td>
<td>Quiz 3; MRI Basics V</td>
<td>LECTURES</td>
<td>MRI Basics V</td>
</tr>
<tr>
<td>November 12, 2018</td>
<td>EXAM 3</td>
<td></td>
<td>EXAM 3</td>
</tr>
<tr>
<td>November 19, 2018</td>
<td>CHAPTER 1 – BOOK</td>
<td>CH 1 AND LECTURES</td>
<td>CHAPTER 1 – BOOK</td>
</tr>
<tr>
<td>November 26, 2018</td>
<td>EXAM 4</td>
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<td>EXAM 4</td>
</tr>
<tr>
<td>December 3, 2018</td>
<td>Case Study Presentations</td>
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<td>Case Study Presentations</td>
</tr>
<tr>
<td>December 10, 2018</td>
<td>Finals Week</td>
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<td>Finals Week</td>
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</table>
Magnetic Resonance Imaging Directed Practice I  
Fall Semester 2018-2019

Course Number: AMIT4011  
Credit Hours: 3.0  
Instructor: Whitney Bowen, MEd, CNMT, RT(MR)  
Office: 215 French East  
bowenwn@ucmail.uc.edu  

Required Text: Handbook of MRI Scanning by Geraldine Burghart & Carol Finn  

Course Description  
This is the first in a sequence of three courses that will stress practical laboratory experience at clinical sites. MRI students will perform MRI examinations under the direct supervision of clinical preceptors. Students will be responsible for completing required clinical hours and MRI competencies on a variety of scanners as they train in local hospitals and imaging centers.

Learning Outcomes  
Upon successful completion of this course, the student will be able to:  
1. Demonstrate proper positioning and scanning protocols for MRI competencies as required for national registry.  
2. Evaluate image quality and calculate changes to imaging procedures to optimize image acquisition.  
3. Apply principles of magnet safety and protection to the patient, self, and others.  
4. Appraise individual patients about their condition and provide optimal patient care and comfort.  
5. Recognize team and leadership skills that are essential to delivering interdisciplinary care.  
6. Anticipate the needs and concerns of healthcare providers, referring physicians, fellow technologists and ancillary personnel.  
7. Reflect upon the service learning activities, their increasing cultural awareness, and their evolving citizenship through journals and written assignments.

Grading:  
Evaluations 50%  
Journals 20%  
Clinical Hours 10%  
Clinical Competencies 10%  
Site Visit 10%

Blackboard Attendance Verification  
Title IV of the Higher Education Act, requires all full-time undergraduate students to verify their course attendance in order to receive ANY federal financial aid. To show participation, you must complete the Attendance Verification Assessment located on Blackboard. Failure to do so may affect the distribution of your financial aid. The Attendance Verification link will be available after classes for this semester officially begin.
AMIT Clinical Site Orientation Checklist

During the first week of each new clinical site, student must complete the MRI AMIT clinical site orientation checklist.

Attendance Policy:
Attendance at all scheduled clinical rotations is required. Please keep accurate and detailed weekly timecards and have it initialed by a technologist daily. If you are sick or unable to make it to your scheduled clinical time, you must contact your clinical site and send Whitney an email/text, as soon as possible. At least one unannounced visit will be made during the semester to evaluate your clinical experience, it is important you let me know if you will be absent. If you are not at your site at the time of a site visit your grade in the Site Visit category will be negatively affected.

A Student Leave Authorization form must also be completed for every missed day (including documentation – Doctor’s excuse, etc), which can be found under Course Documents. You are expected to make-up any missed hours as described in the student handbook (time and a half, unless hours have already been banked).

Students are permitted two personal days each year. Since all time off must be made up, it is recommended that these personal days be used to accommodate the observance of religious or ethnic celebrations. Students not needing these days to facilitate such accommodations are permitted to use them as needed.

** All clinical site rotation hours and scan competencies completed during university designated holidays and breaks are optional for students. Students may use this time to complete Directed Practice course requirements and will remained covered by the University of Cincinnati insurance policy as long as their attendance is directly linked to course requirements.

AMIT clinical rotation hours will follow the UC severe inclement weather policy. Any official UC delays, closures, or early dismissals will be subtracted from your weekly clinical hour requirements.

CLINICAL HOURS (10% of course grade)
Clinical Hours time sheets are due WEEKLY – in class the following Monday.
Clinical rotations at your assigned clinical site will begin the week of Monday, October 1st.
Clinical rotations for the semester are recommended for Tuesday, Thursday, & Friday from 8:00-4:30 (hours may vary per site assignment).

First year and certificate students – For the first 5 weeks of clinical rotations you are responsible for 16 hours of clinical time per week due to the Friday patient orientation course. All remaining semester weeks you are responsible for completing 24 hours per week (excluding UC official holidays).
Second year students - You are responsible for completing 24 hours of clinical time per week (excluding UC official holidays).

For clinical rotations, a total of 176 hours (1st year & certificate students) and 216 hours (2nd year students) must be completed by the end of the semester (see Clinical Rotation Schedule below).

CLINICAL COMPETENCIES (10% of course grade)
Clinical Competencies due on or before Friday, December 7th by 5:00pm.
There will be no alternative to completing competencies. A total of 20 competencies are due at the end of the semester. All competencies must be initialed by a technologist for them to count towards your requirements.
Keep in mind you will need a minimum of 125 clinical competencies by the end of the year.

**EVALUATIONS (50% of course grade)**

Evaluations due on or before Friday, December 7th by 5:00pm.

At least two (2) clinical evaluations must be signed and dated by a technologist and turned in for this semester’s rotation. It is recommended that you receive evaluations from every technologist at your clinical site and receive an evaluation half way through the semester and one at the end of the semester to gauge your progress. Evaluations must be faxed to the AMIT office (513-558-4009) from your site. Evaluations will not be accepted in any other fashion! You must turn in all evaluations that you receive from your site.

Evaluation scores will be averaged to determine your grade for the evaluation category.

**Site Visits (10% of course grade)**

At least one unannounced site visit will be done this semester. Second site visits will be determined based on the observations/comments from your first visit. The site, student or coordinator can determine if a second visit will be necessary. Your comments as well as the site’s comments will be taken into account to determine 10% of your grade. In the event that a second site visit is made, improvement should be seen and will also be considered in your grade.

If you are not at your site at the time of a site visit your grade in the Site Visit category will be negatively affected.

**Journals (20% of course grade)**

Journals due each week on Blackboard (Sunday by 11:59 pm)

A journal entry must be completed weekly on Blackboard beginning the week that clinical rotations begin (Oct. 1st). Journals will be a mixture of reflections, discussion boards and assigned topics. Each journal will vary in points possible and will be graded based on the grading rubric provided on Blackboard. The average of the total journal points will be worth 20% of your final grade.

Topic journals will become available on Monday’s at 8:00 am and reflection journals will be available on Tuesday’s at noon. Late journals **will not** be accepted. You will have a total of 9 journal entries this semester.

**University Information & Policies**

**Technical Questions:** Contact UC Blackboard at 513.556.1602 or send an email to blackboard@uc.edu.

**Academic Integrity Policy**

In pursuit of its teaching, learning and research goals, the University of Cincinnati aspires for its students, faculty and administrators to attain the highest ethical standards, defined by the Center for Academic Integrity (https://academicintegrity.org) as “a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility”.

University rules, including the Student Code of Conduct and other documented policies of the department, college, and university related to academic integrity, will be enforced. It is the student’s responsibility to read the Student Code of Conduct to become familiar with academic integrity policies and definitions of misconduct (www.uc.edu/conduct/Code_of_Conduct.html). **Failure to have read and understood these policies does not constitute a reason to not abide by them.** Any violation of these regulations, including cheating, fabrication, plagiarism, aiding
or abetting academic misconduct on the part of others, or violating ethical or professional standards, will be dealt with upon an individual basis according to the severity of the misconduct. Dishonesty in any form may result in a failing grade in a course and/or suspension or dismissal from a program.

College of Allied Health Science students will be held to the highest ethical standards, critical to building strong character required of healthcare professionals.

- Students are expected to report all instances or knowledge of misconduct.
- Cases of academic misconduct will be formally reported by faculty.
- Students will be afforded due process for allegations as outlined in the policy.
- All students who are found to be guilty of an academic integrity violation are required to meet with the Associate Dean of Academic Affairs to be scheduled by the student within 10 business days, as defined by University policy, from the final decision of the college.

**Counseling Services, Clifton Campus:**

Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/reational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concerns. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-584-7777.

**Title IX:**

Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to me, I am required forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult the website www.uc.edu/titleix or contact the office at 556-3349.

**Special Needs Policy:**

If you have a disability (e.g., visual impairment, hearing impairment, physical impairment, communication disorder, and/or specific learning disability, etc.) which may influence your performance in this course, you must meet with the Disability Services Office (DSO) to arrange for reasonable accommodations to ensure an equitable opportunity to meet all the requirements of this course. If you require accommodations due to disability, please contact DSO at 513-556-6823, Campus Location: 210 University Pavilion. You will be provided an Accommodation Form indicating your accommodation needs for the quarter. Please present this form to me AS SOON AS POSSIBLE to ensure your accommodation needs are discussed, agreed upon, and provided.

**Grade will be calculated as follows:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>95.00 - 100% = A</td>
<td>87.99 - 89.99% = B+</td>
</tr>
<tr>
<td>90.00 - 94.99% = A-</td>
<td>83.00 - 86.99% = B</td>
</tr>
</tbody>
</table>
80.00 - 82.99% = B-
77.00 - 79.99% = C+
73.00 - 76.99% = C

The grading method for this course is noted above. A pass/fail grade will not be allowed for this course. All students accept this grading method by continuing their enrollment in this course. It is all enrolled students' responsibility to confirm they have registered for the course's correct grading method.

Assignment Recap:

- AMIT clinical site orientation checklist due Week 2 of the semester.
- Weekly time sheets are due the follow week in class (Monday).
- Journals are due at the end of each week by Sunday at 11:59 pm.
- Scan Competency Packets must be turned in by Friday, December 7th at 5:00pm.
- Evaluations are due Friday, December 7th at 5pm (this includes: evaluations from your site, your evaluation of your site, and the course evaluation).

- If the Clinical Competency or Clinical Time requirements have not been met by the end of each semester the student will be given an “incomplete” grade for the Directed Practice course. The student’s grade will dropped 1 letter grade for late requirement completion if remedied BEFORE grades are due to the Registrar’s office. Grades will drop 2 letter grades if not remedied before grades are due to the Registrar’s office.

*Course Evaluations open Dec. 2nd and close on Dec. 15th. Please complete all AMIT course evaluations to provide feedback and suggestions for improvement.*

**Clinical Rotation Schedule (1st Year & Certificate Students):**

<table>
<thead>
<tr>
<th>Week</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 - Aug. 27</td>
<td>0 hours</td>
</tr>
<tr>
<td>Week 2 – Sept. 3</td>
<td>0 hours</td>
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<td>0 hours</td>
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<tr>
<td>Week 5 – Sept. 24</td>
<td>0 hours</td>
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<td>Week 6 – Oct. 1</td>
<td>16 hours</td>
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<td>Week 7 – Oct. 8</td>
<td>16 hours</td>
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<td>Week 8 – Oct. 15</td>
<td>16 hours</td>
</tr>
<tr>
<td>Week 9 – Oct. 22</td>
<td>16 hours</td>
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<tr>
<td>Week 10 – Oct. 29</td>
<td>16 hours</td>
</tr>
<tr>
<td>Week 11 – Nov. 5</td>
<td>24 hours</td>
</tr>
<tr>
<td>Week 12 – Nov. 12</td>
<td>16 hours (Veteran’s Day)</td>
</tr>
<tr>
<td>Week 13 – Nov. 19</td>
<td>8 hours (Thanksgiving)</td>
</tr>
<tr>
<td>Week 14 – Nov. 26</td>
<td>24 hours (RSNA Conference)</td>
</tr>
<tr>
<td>Week 15 – Dec. 3</td>
<td>24 hours</td>
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<tr>
<td>Week 16 – Dec. 10</td>
<td>0 hours ( Finals Week)</td>
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176 HOURS

**Clinical Rotation Schedule (2nd Year Students):**

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<tr>
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<tr>
<td>15</td>
<td>Dec. 3</td>
</tr>
<tr>
<td>16</td>
<td>Dec. 10</td>
</tr>
</tbody>
</table>

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216 HOURS
Course Number: AMIT 4005
Credit Hours: 4.0
Time: M 1:20pm-2:10pm – 207 French East
W 10:10-12pm – 316 French East
Instructor: Barry Southers, M.Ed, RT(R)(MR)
Office: 215 French East
Barry.Southers@uc.edu
513.558.7415

Required Text: No text is required

Course Description: This is the second in a sequence of three courses discussing the diagnostic uses of Magnetic Resonance Imaging. This course will emphasize the human musculoskeletal system (upper and lower extremities) and the soft tissue of the neck as seen in multiple orthogonal planes. Distinctions between normal and abnormal with respect to anatomy and physiology will be determined.

Course Objectives:
- Upon successful completion of this course, students will be able to:
  - Identify anatomical structures of the musculoskeletal system and neck soft tissues as seen in multiple orthogonal planes on MR images.
  - Describe gross anatomic and physiologic relationships of the musculoskeletal system and neck soft tissues.
  - Describe the anterior-posterior, proximal-distal and lateral-medial relationships with musculoskeletal system and neck soft tissues anatomy.
  - Distinguish between routine, normal musculoskeletal system and neck soft tissue findings and findings that are associated with disease or injury.
  - Implement magnetic resonance imaging procedures, sequences, and parameters to optimize visualization of the musculoskeletal system and neck soft tissues.

Grading procedures: All tests are 100 points and count equally in value. Class participation, pop quizzes and assignments are worth a total of 50 points also. Case study presentation is worth 150 points.
Test #1: 100 points
Test #2: 100 points
Test #3: 100 points
Test #4: 100 points
MR Imaging Anatomical Overview Assignments (2): 100 points each, 200 total
Quizzes/Assignments/Class Participation: 50 points

Total course points: 650

Individual Case Study: This is an individual case study project which will be worth 150 points. This project will involve selecting a complete MRI exam and thoroughly evaluating and presenting it to the class via a PowerPoint presentation. Please use the assigned rubric to complete all requirements of the case study. You will need to cover and properly tie in: patient
history, diagnosis, MRI sequences, MRI parameters, benefits and necessity of contrast agent if used in the examination, along with all other aspects in the rubric. Be sure to give reasons why the selected sequences and parameters were used in the examination, as well as including images from the examination if possible. **Be sure to delete any and all patient information, as using this would be a serious HIPAA violation.** The total presentation should be no less than 15 minutes and no more than 20 minutes in length.

### Grading schema:

<table>
<thead>
<tr>
<th>Grades Scored Between</th>
<th>Will Equal</th>
</tr>
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<tbody>
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<tr>
<td>&gt;= 90 % and Less Than 95</td>
<td>A-</td>
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<td>&gt;= 85 % and Less Than 90</td>
<td>B+</td>
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<tr>
<td>&gt;= 80 % and Less Than 85</td>
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<tr>
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<tr>
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<tr>
<td>&gt;= 65 % and Less Than 70</td>
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<tr>
<td>&gt;= 60 % and Less Than 65</td>
<td>C-</td>
</tr>
<tr>
<td>&gt;= 55 % and Less Than 60</td>
<td>D+</td>
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<td>&gt;= 50 % and Less Than 55</td>
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<td>&gt;= 45 % and Less Than 50</td>
<td>D-</td>
</tr>
<tr>
<td>&lt; 45 % and Less Than 45</td>
<td>F</td>
</tr>
</tbody>
</table>

**Examinations:** All examinations will be given online via Blackboard; therefore laptop computers are required on all examination days. Please ensure your laptop battery is functional and charged as there will be a 10% deduction in overall score for missing an examination due to not being prepared. Further, a 10% deduction will be imposed on all missed examinations unless a signed physician’s excuse is provided.

**Make-up Examinations:**

****Tests missed, due to absence, must be made up within a 6-day period following the time that the originally scheduled test was administered. **Failure to make up a test within this timeframe will result in a score of “0” for that test!** Make-up tests will be administered at the University of Cincinnati French Hall East, Room 215, at a time agreed upon by the class instructor.****
**Cell phone Policy / Academic Integrity:** Anyone having a ringing cell phone, or looking at a cell phone during a test, will have their test confiscated, and will receive a score of “0” on that test. Academic integrity will not be compromised in this class! Anyone caught cheating will be removed from this class, and subsequently reported to the program director for further discipline, up to and including expulsion.

**Instructor Attendance Policy:** In the event that the instructor must miss a class period, notification will be attempted through Blackboard, at least one hour prior to the beginning of the scheduled class period. This will be posted as an announcement under the class heading. Please make it a habit to check Blackboard prior to the start of class, if at all possible.

**Students with Disabilities:** Students requesting accommodation for disability or health reasons are responsible for notifying the instructor by the end of the first week of the quarter to discuss specific needs. Self-identification is the only way to assure that the faculty member can make the appropriate accommodation. Students should provide a letter from the Disability Services (210 University Pavilion; 513-556-6823; 513-556-3277 TTY; 513-556-1383 Fax; Disabisy@ucmail.uc.edu; Contact by dialing 711) to verify the disability.

**CAHS Weather Related Protocol:** When inclement weather threatens the safety of the University of Cincinnati community, the Senior Vice President for Administration and Finance may invoke University Rule 3361: 10-55-01 and declare an emergency closing. The College of Allied Health Sciences will observe the university emergency closing protocol for all on-campus classes. During a university emergency weather closing, all college offices will be closed. CAHS CETIS will be available online 8:30am-5:00pm to monitor the CETIS Help Desk email account as well as the online ticketing system. If you need assistance from CETIS during the closure, please send an email to cetishelp@uc.edu.

*Students should clarify with their course instructors how the closure will affect assignments and deadlines, and whether class information from the missed session(s) will be posted on Blackboard, and/or if the class will meet virtually during the closure.*

Students currently enrolled in off-campus clinical practicums, field experience, and internships should refer to their individual program’s student handbook to determine if they are expected to report to their placement site during the closure.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
<th>READINGS</th>
<th>OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1: M January 14, 2019</td>
<td>MRI Upper Extremity</td>
<td>LECTURES</td>
<td>MRI Upper Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W January 16, 2019</td>
<td>MRI Upper Extremity</td>
<td>LECTURES</td>
<td>MRI Upper Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W2: M January 21, 2019</td>
<td><strong>NO CLASS</strong></td>
<td></td>
<td><strong>NO CLASS – MLK HOLIDAY</strong></td>
</tr>
<tr>
<td>W January 23, 2019</td>
<td>MRI Upper Extremity</td>
<td>LECTURES</td>
<td>MRI Upper Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W3: M January 28, 2019</td>
<td>MRI Upper Extremity</td>
<td>LECTURES</td>
<td>MRI Upper Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W January 30, 2019</td>
<td>MRI Upper Extremity</td>
<td>LECTURES</td>
<td>MRI Upper Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W4: M February 4, 2019</td>
<td>MRI Upper Extremity</td>
<td>LECTURES</td>
<td>MRI Upper Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W February 6, 2019</td>
<td><strong>EXAM #1</strong></td>
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<td><strong>EXAM #1</strong></td>
</tr>
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<td>W5: M February 11, 2019</td>
<td>MRI Lower Extremity</td>
<td>LECTURES</td>
<td>MRI Lower Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W February 13, 2019</td>
<td>MRI Lower Extremity</td>
<td>LECTURES</td>
<td>MRI Lower Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W6: M February 18, 2019</td>
<td>MRI Lower Extremity</td>
<td>LECTURES</td>
<td>MRI Lower Extremity anatomy/imaging</td>
</tr>
<tr>
<td>W February 20, 2019</td>
<td>MRI Lower Extremity</td>
<td>LECTURES</td>
<td>MRI Lower Extremity anatomy/imaging</td>
</tr>
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<td>W7: M February 25, 2019</td>
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<td>LECTURES</td>
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<td>W8: M March 4, 2019</td>
<td><strong>EXAM #2</strong></td>
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<tr>
<td>W March 6, 2019</td>
<td>MRI UE/LE</td>
<td>LECTURES</td>
<td>MRI Upper/Lower Extremity pathology</td>
</tr>
<tr>
<td>W9: M March 11, 2019</td>
<td>MRI UE/LE</td>
<td>LECTURES</td>
<td>MRI Upper/Lower Extremity pathology</td>
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<td>W March 13, 2019</td>
<td>MRI UE/LE</td>
<td>LECTURES</td>
<td>MRI Upper/Lower Extremity pathology</td>
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<td>W10: M March 18, 2019</td>
<td><strong>NO CLASS</strong></td>
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<td><strong>NO CLASS – SPRING BREAK</strong></td>
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<td>W March 20, 2019</td>
<td><strong>NO CLASS</strong></td>
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<td>W11: M March 25, 2019</td>
<td>MRI UE/LE</td>
<td>LECTURES</td>
<td>MRI Upper/Lower Extremity pathology</td>
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<td>W March 27, 2019</td>
<td>MR Imaging Anatomical</td>
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<td>MR Imaging Anatomical Overview Assignment –</td>
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<td>Overview Assignment – UE</td>
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<td>UE/LE DUE Friday, March 29</td>
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<td>LE DUE Friday, March 29</td>
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<td><strong>EXAM #3</strong></td>
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<td>W12: M April 1, 2019</td>
<td>MRI Neck Soft Tissue</td>
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<td>MRI Neck Soft Tissue anatomy/imaging</td>
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<td>W April 3, 2019</td>
<td>MRI Neck Soft Tissue</td>
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<td>W13: M April 8, 2019</td>
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<td>W April 10, 2019</td>
<td>MR Imaging Anatomical</td>
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<td>Overview Assignment – ST</td>
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<td>UE/LE DUE Friday, April 12</td>
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<td>NECK DUE Friday, April 12</td>
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<td><strong>EXAM #4</strong></td>
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<td><strong>Case Study Presentations</strong></td>
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<tr>
<td>W April 17, 2019</td>
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</table>
Course Number: AMIT 4008  
Credit Hours: 3.0  
Time: Monday 10:10am-12:50pm – 207 French East  
Instructor: Barry Southers, M.Ed, RT(R)(MR)  
Office: 215 French East  
Barry.Southers@uc.edu  
513.558.7415  


Course Description: This course is the second of a series of three courses on MRI Physics and Instrumentation. This course will study T1 recovery and T2 decay, T1, T2 and proton density image contrast, basic concepts of pulse sequences, encoding, k-space, data collection, Fourier Transform, signal-to-noise, contrast-to-noise, spatial resolution, and spin echo formation and pulse sequences.

Course Objectives: Upon completing the course, the student will be able to:
- Identify Define T1 recovery and T2 decay.
- Define and T1, T2, and Proton Density image contrast and their physical parameters that differ in relation to image contrast.
- Describe the physical principles of all spin echo pulse sequences and their differences.
- Describe how slice selection, frequency encoding and phase encoding comprise an MR image.
- Describe k-space, data collection, and Fast Fourier Transform.
- Utilize parameters to optimize SNR, CNR, and spatial resolution.
- Understand parameter trade-offs as it pertains to SNR, CNR, temporal and spatial resolution.

Attendance Policy: Your attendance in every class period is extremely important because of your professional experience that you bring to the classroom and contribute to the learning environment. As in any work situation, your absence will affect those with whom you work. Attendance requires alert participation. Students entering the classroom after 10 minutes will have one percentage point subtracted from their final grade for each infraction. Students missing class will have three percentage points subtracted from their final grade for each infraction. Only events such as funerals or personal illness accompanied by a physician’s note upon return are considered to be an excused absence.
EXAMPLE:

Final grade after examinations: 93% (A-)
Tardy two times: -2%
Absent two times: -6%
Final Grade: 85% (B)

Your career requires manners, effective communication skills, the ability to solve problems, and to articulate these solutions to others in a professional manner. It is important that you be open to new ideas and different opinions. In order to facilitate the development of these skills, please be respectful of others by arriving to class on time, staying for the entire class period, and turning off & stowing away cell phones and beepers.

Students with Disabilities and Student Services:
Students requesting accommodation for disability or health reasons are responsible for notifying the instructor by the end of the first week of the quarter to discuss specific needs. Self-identification is the only way to assure that the faculty member can make the appropriate accommodation. Students should provide a letter from the Disability Services (210 University Pavilion; 513-556-6823; 513-556-3277 TTY; 513-556-1383 Fax; Disabisv@ucmail.uc.edu; Contact by dialing 711) to verify the disability.

The Division of Student Affairs offers many available programs and resources for all University of Cincinnati students. These offerings include but are not limited to: LGBTQ Center, Veterans' Programs and Services, Student Wellness Center, Learning Assistance Center, and Student Activities and Leadership. A comprehensive list of resources can be found on their webpage: http://www.uc.edu/sa.html

All University of Cincinnati students also have full access to the University Health Services on campus and access to health insurance if not covered under another health plan. Many of these health services are available free of charge to students or at a discounted rate: http://med.uc.edu/uhs.

Class Assignments and Activities:
Projects, assignments, quizzes, examinations, and guest speakers, field trips, and journal articles may be utilized within the course. Assignments with due dates and quizzes/examinations with specific dates will be communicated on this syllabus and on Blackboard. Note that any dates on the syllabus are subject to change and it is your responsibility to check Blackboard, with another student, or the Instructor if you miss class or are unaware of any change.

Grading Procedures:
Evaluation

Quizzes (5) – 250 points
Three Examinations – 300 points (100 points each)
Case Study Presentation: 150 points
Class Participation/Professionalism – 100 points
Total Points: 800
Grading Schema:

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<td>70% and Less Than 75</td>
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<td>D+</td>
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<tr>
<td>65% and Less Than 85</td>
<td>D-</td>
</tr>
<tr>
<td>0% and Less Than 65</td>
<td>F</td>
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Quizzes – 150 points
Five quizzes which are worth 50 points each. They will be given the first 20 minutes of class.

Examinations – 300 points
Three Examinations which are worth 100 points each.

Class Participation/Professionalism – 100 points
This section is worth 50 points of your grade. Included in this is the aforementioned Attendance Policy, as well as class participation, respectfulness, and professionalism. You will be evaluated on professionalism and attendance in the workforce and learning good habits will only help you in the future.

Examinations and Quizzes:
All quizzes and examinations will be given online via Blackboard; therefore laptop computers are required on all examination days. Please ensure your laptop battery is functional and charged as there will be a 10% deduction in overall score for missing an examination due to not being prepared. Further, a 10% deduction will be imposed on all missed examinations unless a signed physician’s excuse is provided.

Electronic Communication Policy:
It is expected that students will check their email accounts, Blackboard announcements, and Blackboard discussion boards at least twice per week for possible announcements and discussion regarding the class. Please be sure to use only appropriate language in your communication and to sign your name on all emails.

****Tests missed, due to absence, must be made up within a 6-day period following the time that the originally scheduled test was administered. Failure to make up a test within this timeframe will result in a score of “0” for that test! Make-up tests will be administered at the University of Cincinnati French Hall East, Room 215, at a time agreed upon by the class instructor.****

Academic Integrity:
The work that you submit in this course is expected to be the result of your individual effort only. The use of a computer in no way modifies the standards of academic integrity expected under the University Code. The University Rules, including the Student Code of Conduct, and other documented policies of the department, college, and university related to academic integrity will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct. Please make sure that you behavior is conducive to the academic mission of this program and institution.

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<th>DATE</th>
<th>TOPICS</th>
<th>READINGS</th>
<th>OUTLINE</th>
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<td>W1: Jan 14, 2019</td>
<td>CHAPTER 2 – Book</td>
<td>Book and lectures</td>
<td>CHAPTER 2 – Book</td>
</tr>
<tr>
<td>W2: Jan 21, 2019</td>
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<td></td>
<td>NO CLASS – MLK HOLIDAY</td>
</tr>
<tr>
<td>W3: Jan 28, 2019</td>
<td>Quiz 1:</td>
<td>Book and lectures</td>
<td>CHAPTER 2 – Book</td>
</tr>
<tr>
<td>W4: Feb 4, 2019</td>
<td>Quiz 2;</td>
<td>LECTURES</td>
<td>CHAPTER 3 – Book</td>
</tr>
<tr>
<td>W5: Feb 11, 2019</td>
<td>EXAM 1</td>
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<td>EXAM 1</td>
</tr>
<tr>
<td>W6: Feb 18, 2019</td>
<td>CHAPTER 3 – Book</td>
<td></td>
<td>CHAPTER 3 – Book</td>
</tr>
<tr>
<td>W8: Mar 4, 2019</td>
<td>EXAM 2 ONLINE – due before Sunday, Feb 28 at 11:59pm</td>
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<td>EXAM 2</td>
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<tr>
<td>W9: Mar 11, 2019</td>
<td>Quiz 3;</td>
<td>CHAPTER 5 – Book</td>
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<td>NO CLASS – SPRING BREAK</td>
</tr>
<tr>
<td>W11: Mar 25, 2019</td>
<td>CHAPTERS 5/6 – Book</td>
<td></td>
<td>CHAPTERS 5/6 – Book</td>
</tr>
<tr>
<td>W12: Apr 1, 2019</td>
<td>CH5/6 review; Quiz 4 – Over CH 5 &amp; 6</td>
<td></td>
<td>CH 5/6 review; Quiz 4 – Over CH 5 &amp; 6</td>
</tr>
<tr>
<td>W13: Apr 8, 2019</td>
<td>CHAPTER 7 – Book Quiz 5 – ONLINE</td>
<td></td>
<td>CHAPTER 7 – Book Quiz 5 – ONLINE</td>
</tr>
<tr>
<td>W14: Apr 15, 2019</td>
<td>Case Study Presentations</td>
<td></td>
<td>Case Study Presentations</td>
</tr>
<tr>
<td>W15: Apr 22, 2019</td>
<td>EXAM 3 - ONLINE</td>
<td></td>
<td>EXAM 3 - ONLINE</td>
</tr>
</tbody>
</table>
Magnetic Resonance Imaging Directed Practice II  
Spring Semester 2018-2019

Course Number: AMIT4012  
Credit Hours: 4.0  
Instructor: Whitney Bowen, MEd, CNMT, RT(MR)  
Office: 215 French East  
bowenwn@ucmail.uc.edu  

Required Text: Handbook of MRI Scanning by Geraldine Burghart & Carol Finn  

Course Description  
This is the second in a sequence of three courses that will stress practical laboratory experience at clinical sites. MRI students will perform MRI examinations under the direct supervision of clinical preceptors. Students will be responsible for completing required clinical hours and MRI competencies on a variety of scanners as they train in local hospitals and imaging centers.

Learning Outcomes  
Upon successful completion of this course, the student will be able to:
1. Demonstrate proper positioning and scanning protocols for MRI competencies as required for national registry.  
2. Evaluate image quality and calculate changes to imaging procedures to optimize image acquisition.  
3. Apply principles of magnet safety and protection to the patient, self, and others.  
4. Appraise individual patients about their condition and provide optimal patient care and comfort.  
5. Recognize team and leadership skills that are essential to delivering interdisciplinary care.  
6. Anticipate the needs and concerns of healthcare providers, referring physicians, fellow technologists and ancillary personnel.  
7. Reflect upon the service learning activities, their increasing cultural awareness, and their evolving citizenship through journals and written assignments.

Grading:  
Evaluations 50%  
Journals 20%  
Clinical Hours 10%  
Clinical Competencies 10%  
Site Visit 10%
Blackboard Attendance Verification

Title IV of the Higher Education Act, requires all full-time undergraduate students to verify their course attendance in order to receive ANY federal financial aid. To show participation, you must complete the Attendance Verification Assessment located on Blackboard. Failure to do so may affect the distribution of your financial aid. The Attendance Verification link will be available after classes for this semester officially begin.
AMIT Clinical Site Orientation Checklist

During the first week of each new clinical site, student must complete the MRI AMIT clinical site orientation checklist. Orientation checklists are due to the clinical coordinator by the end of the second week of a new clinical rotation location.

Attendance Policy:

Attendance at all scheduled clinical rotations is required. Please keep accurate and detailed weekly timecards and have it initialed by a technologist daily. If you are sick or unable to make it to your scheduled clinical time, you must contact your clinical site and send Whitney an email/text, as soon as possible. At least one unannounced visit will be made during the semester to evaluate your clinical experience, it is important you let me know if you will be absent. If you are not at your site at the time of a site visit your grade in the Site Visit category will be negatively affected.

A Student Leave Authorization form must also be completed for every missed day (including documentation – Doctor’s excuse, etc), which can be found under Course Documents. You are expected to make-up any missed hours as described in the student handbook (time and a half, unless hours have already been banked).

Students are permitted two personal days each year. Since all time off must be made up, it is recommended that these personal days be used to accommodate the observance of religious or ethnic celebrations. Students not needing these days to facilitate such accommodations are permitted to use them as needed.

** All clinical site rotation hours and scan competencies completed during university designated holidays and breaks are optional for students. Students may use this time to complete Directed Practice course requirements and will remained covered by the University of Cincinnati insurance policy as long as their attendance is directly linked to course requirements.

AMIT clinical rotation hours will follow the UC severe inclement weather policy. Any official UC delays, closures, or early dismissals will be subtracted from your weekly clinical hour requirements.

CLINICAL HOURS (10% of course grade)

Clinical Hours time sheets are due WEEKLY – in class the following Monday

Clinical rotations at your assigned clinical site will begin the week of Monday, January 14th. Clinical rotations for the semester are recommended for Tuesday, Thursday, & Friday from 8:00-4:30 (hours may vary per site assignment).

All certificate and baccalaureate students are responsible for completing 24 hours of clinical time per week (excluding UC official holidays).

For clinical rotations, a total of 336 hours must be completed by the end of the semester (see Clinical Rotation Schedule below).
CLINICAL COMPETENCIES (10% of course grade)
Clinical Competencies due on or before Friday, April 26th by 5:00pm.
There will be no alternative to completing competencies. A total of 45 competencies are due at
the end of the semester. All competencies must be initialed by a technologist for them to count
towards your requirements.
Keep in mind you will need a minimum of 125 clinical
competencies by the end of the year.

EVALUATIONS (50% of course grade)
Evaluations due on or before Friday, April 26th by 5:00pm.
At least two (2) clinical evaluations must be signed and dated by a technologist and turned in for
this semester’s rotation. It is recommended that you receive evaluations from every technologist
at your clinical site and receive an evaluation half way through the semester and one at the end of
the semester to gauge your progress. Evaluations must be faxed to the AMIT office (513-558-4009)
from your site. Evaluations will not be accepted in any other fashion! You must turn in all
evaluations that you receive from your site.
Evaluation scores will be averaged to determine your grade for the evaluation category.

Site Visits (10% of course grade)
At least one unannounced site visit will be done this semester. Second site visits will be
determined based on the observations/comments from your first visit. The site, student or
coordinator can determine if a second visit will be necessary. Your comments as well as the
site’s comments will be taken into account to determine 10% of your grade. In the event that a
second site visit is made, improvement should be seen and will also be considered in your grade.
If you are not at your site at the time of a site visit your grade in the Site Visit category will be
negatively affected.

Journals (20% of course grade)
Journals due each week on Blackboard (Sunday by 11:59 pm)
A journal entry must be completed weekly on Blackboard beginning the week that clinical
rotations begin (Jan. 14th). Journals will be a mixture of reflections, discussion boards and
assigned topics. Each journal will vary in points possible and will be graded based on the grading
rubric provided on Blackboard. The average of the total journal points will be worth 20% of your
final grade.
Topic journals will become available on Monday’s at 8:00 am and reflection journals will be
available on Tuesday’s at noon. Late journals will not be accepted. You will have a total of 13
journal entries this semester.
University Information & Policies

Technical Questions: Contact UC Blackboard at 513.556.1602 or send an email to blackboard@uc.edu.

Academic Integrity Policy

In pursuit of its teaching, learning and research goals, the University of Cincinnati aspires for its students, faculty and administrators to attain the highest ethical standards, defined by the Center for Academic Integrity as “a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility”.

University rules, including the Student Code of Conduct and other documented policies of the department, college, and university related to academic integrity, will be enforced. It is the student’s responsibility to read the Student Code of Conduct to become familiar with academic integrity policies and definitions of misconduct. Failure to have read and understood these policies does not constitute a reason to not abide by them. Any violation of these regulations, including cheating, fabrication, plagiarism, aiding or abetting academic misconduct on the part of others, or violating ethical or professional standards, will be dealt with upon an individual basis according to the severity of the misconduct. Dishonesty in any form may result in a failing grade in a course and/or suspension or dismissal from a program.

College of Allied Health Science students will be held to the highest ethical standards, critical to building strong character required of healthcare professionals.

- Students are expected to report all instances or knowledge of misconduct.
- Cases of academic misconduct will be formally reported by faculty.
- Students will be afforded due process for allegations as outlined in the policy.
- All students who are found to be guilty of an academic integrity violation are required to meet with the Associate Dean of Academic Affairs to be scheduled by the student within 10 business days, as defined by University policy, from the final decision of the college.

Counseling Services, Clifton Campus:

Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal-relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concern. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-584-7777.

Title IX:

Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to me, I am required forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware
of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult the website www.uc.edu/titleix or contact the office at 556-3349.

**Special Needs Policy:**
If you have a disability (e.g., visual impairment, hearing impairment, physical impairment, communication disorder, and/or specific learning disability, etc.) which may influence your performance in this course, you must meet with the Disability Services Office (DSO) to arrange for reasonable accommodations to ensure an equitable opportunity to meet all the requirements of this course. If you require accommodations due to disability, please contact DSO at 513-556-6823, Campus Location: 210 University Pavilion. You will be provided an Accommodation Form indicating your accommodation needs for the quarter. Please present this form to me AS SOON AS POSSIBLE to ensure your accommodation needs are discussed, agreed upon, and provided.

**Grade will be calculated as follows:**

- 95.00 - 100% = A
- 90.00 - 94.99% = A-
- 87.99 - 89.99% = B+
- 83.00 - 86.99% = B
- 80.00 - 82.99% = B-
- 77.00 - 79.99% = C+
- 73.00 - 76.99% = C

*The grading method for this course is noted above. A pass/fail grade will not be allowed for this course. All students accept this grading method by continuing their enrollment in this course. It is all enrolled students’ responsibility to confirm they have registered for the course’s correct grading method.*

**Assignment Recap:**

- AMIT clinical site orientation checklist due by the end of Week 2 of the semester.
- Weekly time sheets are due the follow week in class (Monday).
- Journals are due at the end of each week by Sunday at 11:59 pm.
- Scan Competency Packets must be turned in by Friday, April 26th by 5:00pm.
- Evaluations are due Friday, April 26th by 5:00pm (this includes: evaluations from your site, your evaluation of your site, and the course evaluation)

*If the Clinical Competency or Clinical Time requirements have not been met by the end of each semester the student will be given an “incomplete” grade for the Directed Practice course. The student’s grade will dropped 1 letter grade for late requirement completion if remedied BEFORE grades are due to the Registrar’s office. Grades will drop 2 letter grades if not remedied before grades are due to the Registrar’s office.*

*Course Evaluations open April 21st and close on May 2nd. Please complete all AMIT course evaluations to provide feedback and suggestions for improvement.*
Clinical Rotation Schedule (All MRI Students):

<table>
<thead>
<tr>
<th>Week</th>
<th>Hours</th>
<th>Journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 – Jan. 14</td>
<td>24 hours</td>
<td>Journal 1</td>
</tr>
<tr>
<td>Week 2 – Jan. 21</td>
<td>24 hours</td>
<td>Journal 2</td>
</tr>
<tr>
<td>Week 3 – Jan. 28</td>
<td>24 hours (START)</td>
<td>Journal 3</td>
</tr>
<tr>
<td>Week 4 – Feb. 4</td>
<td>24 hours</td>
<td>Journal 4</td>
</tr>
<tr>
<td>Week 5 – Feb. 11</td>
<td>24 hours</td>
<td>No Journal</td>
</tr>
<tr>
<td>Week 6 – Feb. 18</td>
<td>24 hours</td>
<td>Journal 5</td>
</tr>
<tr>
<td>Week 7 – Feb. 25</td>
<td>24 hours</td>
<td>Journal 6</td>
</tr>
<tr>
<td>Week 8 – March 4</td>
<td>24 hours (OSU MRI)</td>
<td>Journal 7</td>
</tr>
<tr>
<td>Week 9 – March 11</td>
<td>24 hours</td>
<td>Journal 8</td>
</tr>
<tr>
<td>Week 10 – March 18</td>
<td>0 hours (Spring Break)</td>
<td>No Journal</td>
</tr>
<tr>
<td>Week 11 – March 25</td>
<td>24 hours (START)</td>
<td>Journal 9</td>
</tr>
<tr>
<td>Week 12 – April 1</td>
<td>24 hours (OSRT)</td>
<td>Journal 10</td>
</tr>
<tr>
<td>Week 13 – April 8</td>
<td>24 hours</td>
<td>Journal 11</td>
</tr>
<tr>
<td>Week 14 – April 15</td>
<td>24 hours</td>
<td>Journal 12</td>
</tr>
<tr>
<td>Week 15 – April 22</td>
<td>24 hours (PRaISE)</td>
<td>Journal 13</td>
</tr>
<tr>
<td>Week 16 – April 29</td>
<td>0 hours (Finals Week)</td>
<td>No Journal</td>
</tr>
</tbody>
</table>

DIAGNOSTIC MAGNETIC RESONANCE IMAGING III
Course Number: AMIT 4006
Credit Hours: 4.0
Time: M 1:25pm-4:10pm – 207 French East
Instructor: Barry Southers, M.Ed, RT(R)(MR)(FSMRT)
Office: 215 French East
Barry.Southers@uc.edu
513.558.7415

Required Text: N/A

Course Description: This is the third in a sequence of three courses discussing the diagnostic uses of Magnetic Resonance Imaging. This course will emphasize the human thorax, heart, abdomen and pelvis anatomy as seen in multiple orthogonal planes. Distinctions between normal and abnormal with respect to anatomy and physiology will be determined.

Course Objectives:
- Upon successful completion of this course, students will be able to:
  - Identify anatomical structures of the thorax, heart, abdomen and pelvis as seen in multiple orthogonal planes on MR images.
  - Describe gross anatomic and physiologic relationships of the thorax, heart, abdomen and pelvis.
  - Describe the anterior-posterior, proximal-distal and lateral-medial relationships with thorax, heart, abdomen and pelvic anatomy.
  - Distinguish between routine, normal thorax, heart, abdomen, and pelvis findings and findings that are associated with disease or injury.
  - Implement magnetic resonance imaging procedures, sequences, and parameters to optimize visualization of the thorax, heart, abdomen and pelvis.

Grading procedures: All tests are 100 points and count equally in value. Pop quizzes and assignments are worth a total of 50 points also. Case study presentation is worth 150 points.
Exam #1: 100 points
Exam #2: 100 points
Exam #3: 100 points
Case Study Presentation: 150 points
Quizzes/Assignments/Class Participation: 50 points
Anatomical Assignments: 2 (100 points each)

Total course points: 700

Individual Case Study: This is an individual case study project which will be worth 150 points. This project will involve selecting a complete MRI exam and thoroughly evaluating and presenting it to the class via a PowerPoint presentation. Please use the assigned rubric to complete all requirements of the case study. You will need to cover and properly tie in: patient history, diagnosis, MRI sequences, MRI parameters, benefits and necessity of contrast agent if used in the examination, along with all other aspects in the rubric. Be sure to give reasons why
the selected sequences and parameters were used in the examination, as well as including images from the examination if possible. **Be sure to delete any and all patient information, as using this would be a serious HIPAA violation.** The total presentation should be no less than 15 minutes and no more than 20 minutes in length.

**Grading schema:**

<table>
<thead>
<tr>
<th>Grades Scored Between</th>
<th>Will Equal</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 95 &amp; ≤ 100</td>
<td>A</td>
</tr>
<tr>
<td>≥ 93 &amp; &lt; 95</td>
<td>A-</td>
</tr>
<tr>
<td>≥ 88 &amp; &lt; 93</td>
<td>B+</td>
</tr>
<tr>
<td>≥ 85 &amp; &lt; 88</td>
<td>B</td>
</tr>
<tr>
<td>≥ 83 &amp; &lt; 85</td>
<td>B-</td>
</tr>
<tr>
<td>≥ 78 &amp; &lt; 83</td>
<td>C+</td>
</tr>
<tr>
<td>≥ 75 &amp; &lt; 78</td>
<td>C</td>
</tr>
<tr>
<td>≥ 73 &amp; &lt; 75</td>
<td>C-</td>
</tr>
<tr>
<td>≥ 68 &amp; &lt; 73</td>
<td>D+</td>
</tr>
<tr>
<td>≥ 65 &amp; &lt; 68</td>
<td>D</td>
</tr>
<tr>
<td>≥ 63 &amp; &lt; 65</td>
<td>D-</td>
</tr>
<tr>
<td>≥ 0 &amp; ≤ 63</td>
<td>F</td>
</tr>
</tbody>
</table>

**Examinations:** All examinations will be given online via Blackboard; therefore laptop computers are required on all examination days. Please ensure your laptop battery is functional and charged as there will be a 10% deduction in overall score for missing an examination due to not being prepared. Further, a 10% deduction will be imposed on all missed examinations unless a signed physician’s excuse is provided.

**Make-up Examinations:**

****Tests missed, due to absence, **must** be made up within a 6-day period following the time that the originally scheduled test was administered. **Failure to make up a test within this timeframe will result in a score of “0” for that test!** Make-up tests will be administered at the University of Cincinnati French Hall East, Room 215, at a time agreed upon by the class instructor.****
**Cell phone Policy / Academic Integrity:** Anyone having a ringing cell phone, or looking at a cell phone **during a test**, will have their test confiscated, and will receive a score of “0” on that test. Academic integrity will not be compromised in this class! Anyone caught cheating will be removed from this class, and subsequently reported to the program director for further discipline, up to and including expulsion.

**Instructor Attendance Policy:** In the event that the instructor must miss a class period, notification will be attempted through Blackboard, at least one hour prior to the beginning of the scheduled class period. This will be posted as an announcement under the class heading. **Please make it a habit to check Blackboard prior to the start of class, if at all possible.**

**Students with Disabilities and Student Services:** Students requesting accommodation for disability or health reasons are responsible for notifying the instructor by the end of the first week of the quarter to discuss specific needs. Self-identification is the only way to assure that the faculty member can make the appropriate accommodation. Students should provide a letter from the Disability Services (210 University Pavilion; 513-556-6823; 513-556-3277 TTY; 513-556-1383 Fax; Disabisv@ucmail.uc.edu; Contact by dialing 711) to verify the disability.

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<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
<th>READINGS</th>
<th>OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1: May 13, 2019</td>
<td>MRI Abdomen</td>
<td>LECTURES</td>
<td>MRI Abdomen anatomy</td>
</tr>
<tr>
<td>Week 2: May 20, 2019</td>
<td>MRI Abdomen/sequences/positioning/pathology</td>
<td>LECTURES</td>
<td>MRI Abdomen pathology/sequences/positioning/pathology</td>
</tr>
<tr>
<td>Week 3: May 27, 2019</td>
<td><strong>NO CLASS – Memorial Day</strong></td>
<td>LECTURES</td>
<td><strong>NO CLASS – Memorial Day</strong></td>
</tr>
<tr>
<td>Week 4: June 3, 2019</td>
<td>MRI Abdomen/sequences/positioning/pathology</td>
<td>LECTURES</td>
<td>MRI Abdomen pathology/sequences/positioning/pathology</td>
</tr>
<tr>
<td>Week 5: June 10, 2019</td>
<td><strong>EXAM #1 - ABDOMEN</strong></td>
<td>LECTURES</td>
<td><strong>EXAM #1 - ABDOMEN</strong></td>
</tr>
<tr>
<td>Week 6: June 17, 2019</td>
<td>MRI Breast</td>
<td>LECTURES</td>
<td>MRI Breast imaging</td>
</tr>
<tr>
<td></td>
<td>Whitney Bowen – guest lecturer</td>
<td></td>
<td>Whitney Bowen – guest lecturer</td>
</tr>
<tr>
<td>Week 7: June 24, 2019</td>
<td>MRI Chest</td>
<td>LECTURES</td>
<td>MRI Chest/Cardiac imaging</td>
</tr>
<tr>
<td>Week 8: July 1, 2019</td>
<td><strong>ONLINE: EXAM #2 – CARDIAC AND BREAST</strong></td>
<td>ONLINE: EXAM #2 – CARDIAC AND BREAST</td>
<td>ONLINE: EXAM #2 – CARDIAC AND BREAST</td>
</tr>
<tr>
<td>Week 9: July 8, 2019</td>
<td><strong>Chest/Abd Anatomical Assignment due July 8 @ 11:59pm</strong></td>
<td>Chest/Abd Anatomical Assignment due July 8 @ 11:59pm</td>
<td>Chest/Abd Anatomical Assignment due July 8 @ 11:59pm</td>
</tr>
<tr>
<td>Week 10: July 15, 2019</td>
<td>MRI Pelvis anatomy</td>
<td>LECTURES</td>
<td>MRI Pelvis anatomy</td>
</tr>
<tr>
<td>Week 11: July 22, 2019</td>
<td>MRI Pelvis sequences/positioning; MRI Pelvis pathology</td>
<td>MRI Pelvis sequences/positioning; MRI Pelvis pathology</td>
<td>MRI Pelvis sequences/positioning; MRI Pelvis pathology</td>
</tr>
<tr>
<td>Week 12: July 29, 2019</td>
<td><strong>EXAM #3 – PELVIS</strong></td>
<td>LECTURES</td>
<td><strong>EXAM #3 – PELVIS</strong></td>
</tr>
<tr>
<td>Week 13: August 5, 2019</td>
<td><strong>Pelvis Anatomical Assignment due by 11:59pm</strong></td>
<td>Pelvis Anatomical Assignment due by 11:59pm</td>
<td>Pelvis Anatomical Assignment due by 11:59pm</td>
</tr>
</tbody>
</table>

CASE STUDY PRESENTATIONS
MRI PHYSICS AND INSTRUMENTATION III  
Summer Semester 2018-19

Course Number: AMIT 4009  
Credit Hours: 3.0  
Time: Monday 10:10am-12:50pm – 207 French East  
Instructor: Barry Southers, M.Ed, RT(R)(MR)(FSMRT)  
Office: 215 French East  
Barry.Southers@uc.edu  
513.558.7415


Course Description: This course is the second in a sequence of three courses on Magnetic Resonance Imaging Physics and Instrumentation. This course will study gradients, gradient echo formation and pulse sequences, flow phenomena, time-of-flight, gradient moment nulling, image artifacts, MRA, diffusion, perfusion, functional MRI, MR Spectroscopy, and the mechanism, safety and application of MR contrast agents and relaxivity.

Course Objectives:
- Upon successful completion of this course, students will be able to:
  - Describe the physical principles of all gradient echo pulse sequences and their differences.
  - Define and describe the cause and remedy of types of flow phenomena.
  - Identify and remediate image artifacts.
  - Describe gradient amplitude, slew rate, rise time, duty cycle, and ramp sampling.
  - Describe quenching and the procedures that need to be followed in a quenching event.
  - Describe MRA and other MR imaging techniques, such as perfusion and diffusion, fMRI, and MRS.
  - Describe the mechanism of action, applications, and safety of MR contrast agents.

Attendance Policy:
Your attendance in every class period is extremely important because of your professional experience that you bring to the classroom and contribute to the learning environment. As in any work situation, your absence will affect those with whom you work. Attendance requires alert participation.
Students entering the classroom after 10 minutes will have one percentage point subtracted from their final grade for each infraction. Students missing class will have three percentage points subtracted from their final grade for each infraction unless previous approval has been granted. Only events such as funerals or personal illness accompanied by a physician’s note upon return are considered to be an excused absence.
Final grade after examinations: 93% (A-)
Tardy two times: -2%
Absent two times: -6%
Final Grade: 85% (B)

Your career requires manners, effective communication skills, the ability to solve problems, and to articulate these solutions to others in a professional manner. It is important that you be open to new ideas and different opinions. In order to facilitate the development of these skills, please be respectful of others by arriving to class on time, staying for the entire class period, and turning off cell phones and beepers.

**Students with Disabilities and Student Services:**
Students requesting accommodation for disability or health reasons are responsible for notifying the instructor by the end of the first week of the quarter to discuss specific needs. Self-identification is the only way to assure that the faculty member can make the appropriate accommodation. Students should provide a letter from the Disability Services (210 University Pavilion; 513-556-6823; 513-556-3277 TTY; 513-556-1383 Fax; Disabissv@ucmail.uc.edu; Contact by dialing 711) to verify the disability.

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**Class Assignments and Activities:**
Projects, assignments, quizzes, examinations, and guest speakers, field trips, and journal articles may be utilized within the course. Assignments with due dates and quizzes/examinations with specific dates will be communicated on this syllabus and on Blackboard. Note that any dates on the syllabus are subject to change and it is your responsibility to check Blackboard, with another student, or the Instructor if you miss class or are unaware of any change.

**Grading Procedures:**

**Evaluation**

Quizzes (2) – 100 points
Exam 1 – 100 points
Exam 2 – 100 points
   Part 2 = 100 points)
Mock MRI Board Examination #2 – 200 points – in class/at home
Chapter Presentation – 100 points
**Total Points: 800**
Grading Schema:

<table>
<thead>
<tr>
<th>Grades Scored Between</th>
<th>Will Equal</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 % and 100</td>
<td>A</td>
</tr>
<tr>
<td>93 % and Less Than 95</td>
<td>A-</td>
</tr>
<tr>
<td>91 % and Less Than 93</td>
<td>B+</td>
</tr>
<tr>
<td>89 % and Less Than 88</td>
<td>B</td>
</tr>
<tr>
<td>83 % and Less Than 85</td>
<td>B-</td>
</tr>
<tr>
<td>78 % and Less Than 83</td>
<td>C+</td>
</tr>
<tr>
<td>75 % and Less Than 78</td>
<td>C</td>
</tr>
<tr>
<td>73 % and Less Than 75</td>
<td>C-</td>
</tr>
<tr>
<td>68 % and Less Than 73</td>
<td>D+</td>
</tr>
<tr>
<td>65 % and Less Than 68</td>
<td>D</td>
</tr>
<tr>
<td>63 % and Less Than 65</td>
<td>D-</td>
</tr>
<tr>
<td>0 % and Less Than 63</td>
<td>F</td>
</tr>
</tbody>
</table>

Quizzes – 100 points
Two quizzes which are worth 50 points each. They will be given the first 20 minutes of class.

Two Examinations – 200 points
Two Examinations which are worth 100 points each, for a total of 200 points in this section.

Two MRI Mock Board Examinations – 200 points each (400 TOTAL)
Two MRI Mock Board Examinations which are worth 200 points each. The first exam will consist of taking the MRI Mock Board Examination, with the minimum passing score of 75%. You will have as many opportunities to retake the exams as you like, but note that if you only take them once, these scores will reflect your final grade in this section, worth 200 points. If you take the exam, and complete a 75% or higher, you will receive all 200 points for the Final Exam section. Failure to receive a 75% or higher will result in a 74% in this section.
THESE ARE MANDATORY EXAMINATIONS. In order to receive credit of any kind for these examinations they must be completed. Successful completion of these examinations will also provide credit in your Capstone Course. Failure to attempt either part of the examinations will result in a 0% for the part not attempted.
The second mock exam will be taken in class or at home. You will have the opportunity to take the exam home and review and correct all incorrect answers to obtain a total of 200 points. Should you choose not to do so, you will be given a 74% for the exam.

Group Chapter Presentation– 100 points
This section is worth 100 points of your grade. As a group, you will be asked to research, create, and present on a chapter in MRI In Practice. See rubric for more details.

Examinations and Quizzes:
All quizzes and examinations will be given online via Blackboard; therefore laptop computers are required on all examination days. Please ensure your laptop battery is functional and charged as there will be a 10% deduction in overall score for missing an examination due to not being prepared. Further, a 10% deduction will be imposed on all missed examinations unless a signed physician’s excuse is provided.

Electronic Communication Policy:
It is expected that students will check their email accounts, Blackboard announcements, and Blackboard discussion boards at least twice per week for possible announcements and discussion regarding the class. Please be sure to use only appropriate language in your communication and to sign your name on all emails.

****Tests missed, due to absence, must be made up within a 6-day period following the time that the originally scheduled test was administered. Failure to make up a test within this timeframe will result in a score of “0” for that test! Make-up tests will be administered at the University of Cincinnati French Hall East, Room 215, at a time agreed upon by the class instructor.****

Academic Integrity:
The work that you submit in this course is expected to be the result of your individual effort only. The use of a computer in no way modifies the standards of academic integrity expected under the University Code. The University Rules, including the Student Code of Conduct, and other documented policies of the department, college, and university related to academic integrity will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct. Please make sure that your behavior is conducive to the academic mission of this program and institution.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
<th>READINGS</th>
<th>OUTLINE</th>
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</thead>
<tbody>
<tr>
<td>Week 1: May 13, 2019</td>
<td>CHAPTERS 9/10</td>
<td>Book and lectures</td>
<td>CHAPTERS 9/10 – Book</td>
</tr>
<tr>
<td>Week 2: May 20, 2019</td>
<td>CHAPTERS 9/10</td>
<td>Book and lectures</td>
<td>CHAPTERS 9/10 – Book</td>
</tr>
<tr>
<td>Week 3: May 27, 2019</td>
<td>NO CLASS</td>
<td></td>
<td>NO CLASS – Memorial Day</td>
</tr>
<tr>
<td>Week 4: June 3, 2019</td>
<td>QUIZ #1 – OVER CH 9/10</td>
<td></td>
<td>QUIZ #1 – OVER CH 9/10</td>
</tr>
<tr>
<td>Week 5: June 10, 2019</td>
<td>CHAPTER 11 Group 1 Presentation</td>
<td>Book and lectures</td>
<td>CHAPTER 11 – Book</td>
</tr>
<tr>
<td>Week 6: June 17, 2019</td>
<td>EXAM 1 – CH 9,10,11</td>
<td></td>
<td>EXAM 1 – CH 9,10,11</td>
</tr>
<tr>
<td>Week 7: June 24, 2019</td>
<td>Mock MRI registry EXAM (TAKE HOME)</td>
<td></td>
<td>Mock MRI registry EXAM (TAKE HOME)</td>
</tr>
<tr>
<td>Week 8: July 1, 2019</td>
<td>CHAPTER 12 Group 2 Presentation</td>
<td>Book and lectures</td>
<td>CHAPTER 12 – Book</td>
</tr>
<tr>
<td>Week 9: July 8, 2019</td>
<td>CHAPTER 8 Group 3 Presentation</td>
<td></td>
<td>CHAPTER 8 Group 3 Presentation</td>
</tr>
<tr>
<td>Week 10: July 15, 2019</td>
<td>QUIZ #2 OVER CH 12 TAKE HOME MRI Mock Registry Exam DUE</td>
<td>Book and lectures</td>
<td>QUIZ #2 OVER CH 12 CHAPTER 8 – Book TAKE HOME MRI Mock Registry Exam DUE</td>
</tr>
<tr>
<td>Week 11: July 22, 2019</td>
<td>EXAM #2 – CH 12 AND 8 Finish up review/Corrected Take Home Mock MRI registry EXAM DUE</td>
<td></td>
<td>EXAM #2 – CH 12 AND 8 Finish up/Corrected Take Home Mock MRI registry EXAM DUE</td>
</tr>
<tr>
<td>Week 12: July 29, 2019</td>
<td>Case Study Presentations</td>
<td></td>
<td>Case Study Presentations</td>
</tr>
<tr>
<td>Week 13: August 5, 2019</td>
<td>ONLINE MRI REGISTRY EXAMINATIONS DUE</td>
<td></td>
<td>ONLINE MRI REGISTRY EXAMINATIONS DUE</td>
</tr>
</tbody>
</table>
Magnetic Resonance Imaging Directed Practice III
Summer Semester 2018-2019

Course Number: AMIT4013
Credit Hours: 4.0
Instructor: Whitney Bowen, MEd, CNMT, RT(MR)
Office: 215 French East
bowenwn@ucmail.uc.edu

Required Text: *Handbook of MRI Scanning* by Geraldine Burghart & Carol Finn

Course Description
This is the third in a sequence of three courses that will stress practical laboratory experience at clinical sites. MRI students will perform MRI examinations under the direct supervision of clinical preceptors. Students will be responsible for completing required clinical hours and MRI competencies on a variety of scanners as they train in local hospitals and imaging centers.

Learning Outcomes
Upon successful completion of this course, the student will be able to:
1. Demonstrate proper positioning and scanning protocols for MRI competencies as required for national registry.
2. Evaluate image quality and calculate changes to imaging procedures to optimize image acquisition.
3. Apply principles of magnet safety and protection to the patient, self, and others.
4. Appraise individual patients about their condition and provide optimal patient care and comfort.
5. Recognize team and leadership skills that are essential to delivering interdisciplinary care.
6. Anticipate the needs and concerns of healthcare providers, referring physicians, fellow technologists and ancillary personnel.
7. Reflect upon the service learning activities, their increasing cultural awareness, and their evolving citizenship through journals and written assignments.

Grading:
Evaluations 50%
Journals 20%
Clinical Hours 10%
Clinical Competencies 10%
Site Visit 10%

Blackboard Attendance Verification
Title IV of the Higher Education Act, requires all full-time undergraduate students to verify their course attendance in order to receive ANY federal financial aid. To show participation, you must complete the Attendance Verification Assessment located on Blackboard. Failure to do so
may affect the distribution of your financial aid. The Attendance Verification link will be available.

**AMIT Clinical Site Orientation Checklist**

During the first week of each new clinical site, student must complete the MRI AMIT clinical site orientation checklist. Orientation checklists are due to the clinical coordinator by the end of the second week of a new clinical rotation location. **Due Monday, May 20th.**

**Attendance Policy:**

Attendance at all scheduled clinical rotations is required. Please keep accurate and detailed weekly timecards and have it initialed by a technologist daily. If you are sick or unable to make it to your scheduled clinical time, you must contact your clinical site and send Whitney an email/text, as soon as possible. At least one unannounced visit will be made during the semester to evaluate your clinical experience, it is important you let me know if you will be absent. If you are not at your site at the time of a site visit your grade in the Site Visit category will be negatively affected.

A Student Leave Authorization form must also be completed for every missed day (including documentation – Doctor’s excuse, etc), which can be found under Course Documents. You are expected to make-up any missed hours as described in the student handbook (time and a half, unless hours have already been banked).

Students are permitted two personal days per academic year. Since all time off must be made up, it is recommended that these personal days be used to accommodate the observance of religious or ethnic celebrations. Students not needing these days to facilitate such accommodations are permitted to use them as needed.

**All clinical site rotation hours and scan competencies completed during university designated holidays and breaks are optional for students. Students may use this time to complete Directed Practice course requirements and will remained covered by the University of Cincinnati insurance policy as long as their attendance is directly linked to course requirements.**

**AMIT clinical rotation hours will follow the UC severe inclement weather policy. Any official UC delays, closures, or early dismissals will be subtracted from your weekly clinical hour requirements.**

**CLINICAL HOURS (10% of course grade)**

Clinical Hour time sheets are due WEEKLY – in class the following Monday. Clinical rotations at your assigned clinical site will begin the week of Monday, May 13th. You are responsible for completing twenty-four (24) clinical rotations hours per week. Clinical rotations for the semester are recommended for Tuesday, Thursday, & Friday from 8:00-4:30 (hours may vary per site assignment).

All certificate and baccalaureate students are responsible for completing 24 hours of clinical time per week (excluding UC official holidays).

**For clinical rotations, a total of 280 hours must be completed by the end of the semester** (see Clinical Rotation Schedule below).
CLINICAL COMPETENCIES (10% of course grade)
Clinical Competencies due on or before Friday, August 9th by 5:00pm.
There will be no alternative to completing competencies. An individual number of competencies are due at the end of the semester. Consult Blackboard grade center to check your individual competency number. All competencies must be initialed by a technologist for them to count towards your requirements.

Keep in mind you will need a minimum of 125 clinical competencies by the end of the year.

EVALUATIONS (50% of course grade)
Evaluations due on or before Friday, August 9th by 5:00pm.
At least two (2) clinical evaluations must be signed and dated by a technologist and turned in for this semester’s rotation. It is recommended that you receive evaluations from every technologist at your clinical site and receive an evaluation half way through the semester and one at the end of the semester to gauge your progress. Evaluations must be faxed to the AMIT office (513-558-4009) from your site. Evaluations will not be accepted in any other fashion! You must turn in all evaluations that you receive from your site.
Evaluation scores will be averaged to determine your grade for the evaluation category.

Site Visits (10% of course grade)
At least one unannounced site visit will be done this semester. Second site visits will be determined based on the observations/comments from your first visit. The site, student or coordinator can determine if a second visit will be necessary. Your comments as well as the site’s comments will be taken into account to determine 10% of your grade. In the event that a second site visit is made, improvement should be seen and will also be considered in your grade.
If you are not at your site at the time of a site visit your grade in the Site Visit category will be negatively affected.

Journals (20% of course grade)
Journals due each week on Blackboard (Sunday by 11:59 pm)
A journal entry must be completed weekly on Blackboard. Journals will be a mixture of reflections, discussion boards and assigned topics. Each journal will vary in points possible and will be graded based on the grading rubric provided on Blackboard. The average of the total journal points will be worth 20% of your final grade.
Topic journals will become available on Monday’s at 8:00 am and reflection journals will be available on Wednesday’s at noon. Late journals will not be accepted. You will have a total of 10 journal entries this semester.
University Information & Policies

Technical Questions: Contact UC Blackboard at 513.556.1602 or send an email to blackboard@uc.edu.

Academic Integrity Policy
In pursuit of its teaching, learning and research goals, the University of Cincinnati aspires for its students, faculty and administrators to attain the highest ethical standards, defined by the Center for Academic Integrity as “a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility”.

University rules, including the Student Code of Conduct and other documented policies of the department, college, and university related to academic integrity, will be enforced. It is the student’s responsibility to read the Student Code of Conduct to become familiar with academic integrity policies and definitions of misconduct. Failure to have read and understood these policies does not constitute a reason to not abide by them. Any violation of these regulations, including cheating, fabrication, plagiarism, aiding or abetting academic misconduct on the part of others, or violating ethical or professional standards, will be dealt with upon an individual basis according to the severity of the misconduct. Dishonesty in any form may result in a failing grade in a course and/or suspension or dismissal from a program.

College of Allied Health Science students will be held to the highest ethical standards, critical to building strong character required of healthcare professionals.

- Students are expected to report all instances or knowledge of misconduct.
- Cases of academic misconduct will be formally reported by faculty.
- Students will be afforded due process for allegations as outlined in the policy.

All students who are found to be guilty of an academic integrity violation are required to meet with the Associate Dean of Academic Affairs to be scheduled by the student within 10 business days, as defined by University policy, from the final decision of the college.

Counseling Services, Clifton Campus:
Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concerns. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-584-7777.

Title IX:
Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also
covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to me, I am required forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult the website www.uc.edu/titleix or contact the office at 556-3349.

**Special Needs Policy:**
If you have a disability (e.g., visual impairment, hearing impairment, physical impairment, communication disorder, and/or specific learning disability, etc.) which may influence your performance in this course, you must meet with the Disability Services Office (DSO) to arrange for reasonable accommodations to ensure an equitable opportunity to meet all the requirements of this course. If you require accommodations due to disability, please contact DSO at 513-556-6823, Campus Location: 210 University Pavilion. You will be provided an Accommodation Form indicating your accommodation needs for the quarter. Please present this form to me AS SOON AS POSSIBLE to ensure your accommodation needs are discussed, agreed upon, and provided.

**Grade will be calculated as follows:**

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
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<tr>
<td>95.00 - 100%</td>
<td>A</td>
</tr>
<tr>
<td>90.00 - 94.99%</td>
<td>A-</td>
</tr>
<tr>
<td>87.99 - 89.99%</td>
<td>B+</td>
</tr>
<tr>
<td>83.00 - 86.99%</td>
<td>B</td>
</tr>
<tr>
<td>80.00 - 82.99%</td>
<td>B-</td>
</tr>
<tr>
<td>77.00 - 79.99%</td>
<td>C+</td>
</tr>
<tr>
<td>73.00 - 76.99%</td>
<td>C</td>
</tr>
<tr>
<td>70.00 - 72.99%</td>
<td>C-</td>
</tr>
</tbody>
</table>

*The grading method for this course is noted above. A pass/fail grade will not be allowed for this course. All students accept this grading method by continuing their enrollment in this course. It is all enrolled students' responsibility to confirm they have registered for the course's correct grading method.*

**Assignment Recap:**

- AMIT clinical site orientation checklist due May 20th.
- Attendance Verification due May 26th at 11:59pm.
- Weekly time sheets are due the follow week in class (Monday).
- Journals are due at the end of each week by Sunday at 11:59 pm.
- Scan Competency Packets must be turned in by Friday, August 9th at 5:00pm.
- Evaluations are due Friday, August 9th at 5pm (this includes: evaluations from your site, your evaluation of your site, and the course evaluation)

*If the Clinical Competency or Clinical Time requirements have not been met by the end of each semester the student will be given an “incomplete” grade for the Directed Practice course. The student’s grade will dropped 1 letter grade for late requirement completion if remedied BEFORE grades are due to the Registrar’s office. Grades will drop 2 letter grades if not remedied before grades are due to the Registrar’s office.*
# MRI Clinical Rotation Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Hours</th>
<th>Journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 – May 13</td>
<td>24 hours</td>
<td>No Journal</td>
</tr>
<tr>
<td>Week 2 – May 20</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 3 – May 27</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 4 – June 3</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 5 – June 10</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 6 – June 17</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 7 – June 24</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 8 – July 1</td>
<td>16 hours (July 4th)</td>
<td>No Journal</td>
</tr>
<tr>
<td>Week 9 – July 8</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 10 – July 15</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 11 – July 22</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 12 – July 29</td>
<td>24 hours</td>
<td>Journal</td>
</tr>
<tr>
<td>Week 13 – Aug 5</td>
<td>0 hours (Finals Week)</td>
<td>No Journal</td>
</tr>
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</table>