

Aquarius Institute



MAGNETIC RESONANCE IMAGING (MRI) TECHNOLOGIST PROGRAM CATALOG



Update: March 28, 2014;

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MAGNETIC RESONANCE IMAGING (MRI) TECHNOLOGIST CIP Code 51-0920	MC - 900	12

**Certificate of Approval to operate issued by the Division of Private
Business and Vocational Schools of the Illinois Board of Higher
Education, 431 East Adams, Second Floor, Springfield, IL 62701**

CATALOG GOOD THRU: JULY 2014 – JUNE 2015
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WELCOME

TO THE *AQUARIUS INSTITUTE*

The *Aquarius Institute* offers comprehensive software and health care educational training and placement assistance in the Chicago land area.

Programs consist of **26-52** weeks of hands-on classroom instructions, depending on the type of program selected. We limit the size of our classes to **18** students in order to provide good interaction with every student.

The professionals at the *Aquarius Institute* are always available to support every student's need. We take a hands-on personal and professional interest from our student's enrollment until after graduation. By providing qualified and skilled instructors, career seminars, and placement assistance in the Chicagoland area, we are not only more than capable to educate our students, but to also prepare them for the job market that lies ahead.

Our Mission

To be the leading provider of career training with a specific interest in high demand job trends in America's ever changing job market.

Aquarius Methodology

Aquarius Institute provides Healthcare training through the use of adult learning methodology, cutting-edge course content, technology and real hands on practice. In an age of technological globalization, companies must find methods to garner the employee skills and technology and transform it into a competitive advantage. At *Aquarius*, we train our students to enter the business world with the knowledge and skills necessary to add immediate value to a company. However, technical knowledge alone is not enough. But rather, a fine integration of core competencies in knowledge, technical and communication skills empower the individual to deliver value-added work products in a clear and concise manner.

To achieve the aforementioned goal, *Aquarius* stresses the importance of individual attention, state-of-the-art facilities, and clinical internships held at affiliated Health Care Centers.

****Check regularly for expanded hours and holidays with your local Aquarius Institute center.***

Aquarius provides training in certification programs like ***Ultrasound/Sonography Technician, MRI Technologist, and Medical Administrative Assistant***

TO ENROLL: 1-847-296-8870

Our training is focused on empowering graduates with the ability to grasp healthcare concepts in the human being which gives them the flexibility to solve healthcare issues that may arise during the course of the life span of clients/patient/customers. Certified professionals earn higher salaries than non-certified professionals; *our professional certification programs give our students the edge in today's demanding job market.*

Aquarius strives to achieve providing its students with the feeling of complete satisfaction. Student satisfaction is Aquarius' motivation to move ahead as one of the leaders in the Allied Health Care Industry.

Graduation Guidelines

Graduation depends on the valid marks scored in the examinations conducted at appropriate times after sufficient instruction has been provided. Passing and graduation are based upon the final examination and the percentage of marks scored in all the assignments.

Note: Students who achieve a below "C" grade point average are considered to have failed and will need to repeat the Program until they have achieved a passing grade.

Grading

90 % - or higher	"A"
80% - 89%	"B"
70% - 79%	"C"
60% - 69%	"D"
59% or less	"F"

Note: Students who score a below "C" course grade are considered to have failed and will need to repeat the course again until they have completed it successfully.

Scoring Procedure

The scoring procedure is determined by successful completion of all take-home assignments and scheduled exams. The number of exams is dependent on the duration of the program. All courses have a minimum of a mid-term and final exam; programs with multiple modules require, on average, one exam per module. Take-home assignments are also dependent on program duration. All exercises, specifically, take-home assignments and examinations, are combined and then averaged to produce a final program grade.

Attendance

Besides a grade of "C" or better, **80% attendance is MANDATORY** to be considered for the graduation.

If a student acquires a sickness or gets into an accident that precludes them from attending classes via the established schedule, the student can retake the program at a later time without any penalty, or if the student wants to drop the program as a result of the aforementioned possibility than the refund policy process is applicable to them.

Student /Teacher Ratio

Aquarius Institute believes in providing quality training and individual attention to each of its students. As a result, *Aquarius* limits its classroom size to no more than **18** students - an **18:1** student to teacher ratio.

Methods of Student Payments

Several payment options are available for registration fees and tuition payment:

- Students can obtain a private educational loan from their desired private bank.
- Students who are eligible to obtain the WIA Grant through the State of Illinois unemployment agencies, can submit their approved WIA Grant Voucher towards their payments
- Students can make their payments by cash/checks.
- Aquarius Institute also accepts student payments via Visa, MasterCard, American Express, or Discover.
- Aquarius Institute has the option of an installment payment plan (see below)

Installment Plans

Students have the option of paying for their program of choice via an installment plan.

Tuition Fees: \$ 12,500.00

*Payment Plan Option: \$2000 down payment followed by \$300 monthly payments
(No interest is charged for using the installment method of payment)*

Note: A late fee of \$10 per week applies to all installment payments not paid on schedule; see installment plan sheet for details.

TO ENROLL: 1-847-296-8870

Financial Aid

We are listed with:

Work Force Development Council

Illinois Employment & Training Center

We are approved by the above agencies to provide financial aid for unemployed and under-employed individuals for updating their skills in Healthcare programs. Ask our career counselor how to contact the above agencies directly to find out if you are eligible for financial aid. Prior to admission, if applicable, the prospective student is required to gain approval from one of the above approved agencies.

Repeating a Program

After the completion of a program, **a student may repeat the completed program** within twelve months of its completion. There is no fee for repeating a program. However, space must be available. An application must be submitted 2 weeks prior to class start date.

Buyers *Right to Cancel*

The student has the right to cancel the *enrollment agreement* until midnight of the 5th business day after the enrollment agreement has been signed by the student and the student has been accepted by *Aquarius Institute*; and if the right to cancel is not given to any prospective student at the time the enrollment agreement is signed, then the student has the right to cancel the agreement at any time and receive a refund of all monies paid to date within 10 days of the cancellation.

Notice of cancellation must be made in writing and sent to:

Aquarius Institute
1011 E. Touhy Avenue
Suite 335
Des Plaines, IL. 60018
847-296-8870

Or:

Aquarius Institute
3420 W. Peterson Avenue
Suite #201
Chicago, IL. 60659
773-604-4305

AQUARIUSINSTITUTE.COM

Refund Policy

Aquarius Institute wants its students to be completely satisfied. Our refund policy allows our students to withdraw from the program up until 60% of the program has been completed. *Our refund policy also follows the guidelines set by Illinois statutes in relation to private business and vocational schools as per 105 ILCS 425.*

The detailed refund policy is as follows:

- A. When the notice of cancellation is given before midnight of the 5th business day after the enrollment but prior to the first day of class, all application/registration fees, tuition and any other charges shall be refunded to the student.
- B. When the notice of cancellation is given after midnight of the 5th business day following acceptance but prior to the close of business on the student's first day of class attendance, *Aquarius* will retain no more than the application/registration fee – which may not exceed \$150 or 50% of the cost of tuition, whichever is less.
- C. When the notice of cancellation is given after the student's completion of the first day of scheduled class attendance, but prior to the student's completion of 5% of the program, *Aquarius* will retain the application/registration fee, an amount not to exceed 10% of the tuition and other instructional charges or \$300.00 - whichever is less, plus the cost of any books or materials, which have been provided by *Aquarius*.
- D. When the student has completed in excess of 5% of the program of instruction, *Aquarius* will retain the application/registration fee, and the cost of any books and materials which have been provided by *Aquarius*, but shall refund a part of the tuition and other instructional charges in accordance with the following:

Aquarius will retain an amount computed pro rata by days in class plus 10% of tuition and other instructional charges up to completion of 60% of the program of instruction. When the student has completed in excess of 60% of the program of instruction, *Aquarius* will retain the application/registration fee and the entire tuition and other charges.

- E. Applicants not accepted by *Aquarius* shall receive a refund of all tuition and fees paid within 30 days of the determination of non-acceptance.
- F. Application/registration fee will be \$150.00 at initial enrollment.
- G. Deposits and down payments shall become part of tuition.
- H. All student refunds will be made by *Aquarius* within 30 calendar days from the date of receipt of a student's written cancellation notice.
- I. *Aquarius* will refund all money paid to it under any of the following circumstances:
 1. *Aquarius* did not provide the prospective student with a copy of the student's valid Enrollment agreement.
 2. *Aquarius* cancels or discontinues the program of instruction in which the student has enrolled.
 3. *Aquarius* fails to conduct classes on days and times scheduled; detrimentally affecting the student, with the exception below.
- J. Due to bad weather (natural calamities), or due to the instructor's sickness, under this circumstance *Aquarius Institute* will reschedule the classes to make-up for the lost time.
- K. If a student is on a payment plan with *Aquarius* for their tuition payments, the above refund policy is applicable for that student also.

TO ENROLL: 1-847-296-8870

- L. In the event a student withdraws from a program, or if the student made lesser payments than determined by the refund policy, the student has to make up the difference of payment in 7 days from official withdrawal otherwise collection procedures will begin.
- M. Students who enroll in a package deal have to finish all the programs within one year from the date of enrollment. Otherwise, they are not eligible to attend the programs after one year and all the tuition fees paid for the programs will be retained by the *Aquarius Institute*.
- N. If there is an unresolved problem, please first address your written grievance to the School Director at the following address:
Aquarius Institute, Corporate Office, 1011 East Touhy Avenue, Suite 335, Des Plaines, IL 60018.

If after first contacting the School Director the grievance relating to the return policy and/or student contract/enrollment agreement remains unresolved, students may submit complaints to the following Board of Education office or website:

Illinois Board of Higher Education
431 East Adams Street, 2nd Floor
Springfield, IL 62707

Or at www.ibhe.org

Job Placement *Assistance*

We have created several programs designed to assist with placing you in the best possible **career** that compliments your specialization in training. Aquarius also conducts regular job fairs with local employers and other career services.

1. Our job placement program starts with an interview performed by our Job Placement Director to help you prepare a dynamic resume illustrating your core-competencies and skill sets.
2. Several companies ask us to submit resumes for different Information Technology & health care skills. We forward to those companies resumes of our graduating students with qualifying performances.
3. Aquarius Institute job placement staff makes frequent calls to legal employers to find possible job openings for the students.
4. **Student Services** facilitate each student's intellectual, academic, social and career development. This reflects respect for cultural, racial, religious, social, intellectual, and economic diversity. Our commitment empowers students to become self-confident, self-reliant, productive, resilient, compassionate, and creative individuals. Services include making copies, resume review, interview skills and job placement assessment and assistance.

Computer

Students have access to the computer labs any time during regular hours while enrolled in a class at *Aquarius*. ***Food & drink is not allowed in the computer lab***

Conduct & Courtesy

Students should conduct themselves in a manner appropriate and conducive to a business / educational environment. Any student involved in obstruction/disruption of the training/business activities, theft, damage of *Aquarius* property, or misconduct, will be subject to dismissal and no refunds will be issued. ***Theft or damage will be reported to the police.***

STUDENT SUGGESTIONS

1. All the students are welcome to put their comments and suggestions into the “Comment, Suggestion and Complaint” box located in the administrative office.
2. If the complaints are not resolved within 5 business days by the administration, the student must see or write to the Director of Education at Aquarius Institute.

STUDENT COMPLAINTS

1. If there is any problem, please address your written grievance/complaint to:

Director of Education
Aquarius Institute
Corporate Office
1011 East Touhy Avenue Suite 335
Des Plaines, IL 60018

2. If there is an unresolved problem, please first address your written grievance to the School Director at the above address. If after contacting the School Director the grievance relating to the return policy and/or student contract remains unresolved, students may submit complaints to the following Board of Education office or website:

Illinois Board of Higher Education
431 East Adams Street, 2nd Floor
Springfield, IL 62707

Or at www.ibhe.org

EQUAL OPPORTUNITY ASSURANCE STATEMENT

It is the policy of Aquarius to comply with Section 188 of the Workforce Investment Act of 1998 (WIA), which prohibits discrimination against all individuals in the United States on the basis of race, color, religion, sex, national origin, age, sexual orientation, disability, political affiliation or belief and against beneficiaries on the basis of either citizenship/status as a lawfully admitted immigrant authorized to work in the United States or participation in any WIA Title 1 financially assisted program or activity.

Aquarius complies with Title VI of the Civil Rights Act of 1964, as amended which prohibits discrimination on the basis of race, color, and national origin.

Aquarius complies with the American with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973, as amended, which prohibits discrimination against qualified individuals with disabilities.

Aquarius complies with Section 188 of the WIA, which provides that persons with disabilities must be provided with reasonable accommodations and modifications for their disabilities. The section also requires that individuals with disabilities be given services alongside (not segregated from) people without disabilities, unless the program or activity providing services performs an individualized assessment of a particular individual with a disability and concludes that the individual needs special, segregated services.

Aquarius complies with the Age Discrimination in Employment Act of 1975, as amended, which prohibits discrimination on the basis of age.

The Aquarius Institute also assures that it will comply with 29 CFR, Part 37 and all other regulations implementing the laws listed above. The Aquarius Institute is an “equal opportunity employer/program” and “auxiliary aids and services are available upon request to individuals with disabilities.”

If any individual feels discriminated against based on any of the above conditions by an Aquarius Institute staff member, that individual may file a complaint with the director of Aquarius Institute. The director of Aquarius Institute is Jameel Ahmed; he can be reached at (847) 296-8870. If any individual needs to file a complaint, the individual can do so by contacting the director of Aquarius Institute or by writing to Aquarius Institute at 1011 East Touhy Avenue, Suite 335, Des Plaines, IL 60018.

SEXUAL HARASSMENT STATEMENT

The courts have determined that sexual harassment is a form of discrimination under Title VII of the U.S. Civil Rights Act of 1964, as amended in 1991.

Policy Statement:

It is the responsibility of each individual employee and program participant to refrain from sexual harassment, and it is the right of each individual employee and program participant to work in an environment free from sexual harassment.

Definition of Sexual Harassment:

According to the Illinois Human Rights Act, sexual harassment is defined as:

Any unwelcome sexual advances or requests for sexual favors or any conduct of a sexual nature when

1. Submission to such conduct is made either explicitly or implicitly a term of condition of an individual's employment or program participation in a Aquarius Program,
2. Submissions to or rejection of such conduct by an individual is used as the basis for employment or program participation decisions affecting such individual, or
3. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

Other conduct commonly considered to be sexual harassment includes:

- Verbal: Sexual innuendos, suggestive comments, insults, humor and jokes about sex, anatomy – or gender – specific traits, sexual propositions, threats, repeated requests for dates, or statements about other employees, even outside of their presence, of a sexual nature.
- Non-verbal: Suggestive or insulting sounds (whistling), leering, obscene gestures, sexually suggestive bodily gestures, “catcalls,” “smacking” or “kissing” noises.
- Visual: Posters, signs, pin-ups or slogans of a sexual nature.
- Physical: Touching, unwelcome hugging or kissing, pinching, brushing the body, coerced sexual intercourse, or actual assault.

Sexual harassment most frequently involves a man harassing a woman. However, it can also involve a woman harassing a man or harassment between members of the same gender.

The most severe and overt forms of sexual harassment are easier to determine. On the other end of the spectrum, some sexual harassment is more subtle and depends to some extent on individual perception and interpretation. The trend in the courts is to assess sexual harassment by a standard of what would offend a “reasonable woman” or a “reasonable man,” depending on the gender of the alleged victim.

An example of the most subtle form of sexual harassment is the use of endearments. The use of terms such as “honey,” “darling,” and “sweetheart,” is objectionable to many women who believe that these terms undermine their authority and their ability to deal with men on an equal and professional level.

Responsibility of Individual Employees or Program Participants:

Each individual employee or program participant has the responsibility to refrain from sexual harassment in the workplace.

An individual or program participant who sexually harasses a program participant or fellow program participant is, of course, liable for his or her individual conduct.

The harassing employee or program participant will be subject to disciplinary action up to and including discharge or dismissal from employment or the program in accordance with the employment and/or program policy.

All Aquarius Institute students must refrain from sexual harassment and follow the policies set forth for the Aquarius Institute students. Students should read the details on sexual harassment found in this program catalog.

If any individual feels sexually harassed based on any of the above conditions by an Aquarius Institute student, that individual may file a complaint with the director of Aquarius Institute. The director of Aquarius Institute is Jameel Ahmed; he can be reached at (847) 296-8870. If any individual needs to file a complaint, the individual can do so by contacting the director of Aquarius Institute or by writing to Aquarius Institute at 1011 East Touhy Avenue, Suite 335, Des Plaines, IL 60018.

MAGNETIC RESONANCE IMAGING (MRI) TECHNOLOGIST

CIP Code 51-0920

Description: This is a one year Magnetic Resonance Imaging (MRI) Technologist Training Program which also includes 1000 hours of mandatory MRI Clinical Internship (classroom and clinical internship combined may take in excess of 18 months to complete). This program is developed to prepare students to operate MRI Equipment safely and competently to produce diagnostically acceptable images. Having completed this program the student will have sufficient knowledge and skills to work in an MRI center or Hospital's MRI Dept. as an MRI technologist. This program provides sufficient theory and practical knowledge so as to enable the students to challenge the National Certification Examination in MRI modality. Upon successful completion of both Didactic and Clinical parts of the Program, the School will conduct a comprehensive exam and those who obtain a minimum of 70% score will be awarded a Certificate of Completion from the School. The refund policy will be based on the 300 hours of coursework. It will be the responsibility of the School to provide Clinical Internship opportunities to the MRI students at MRI Clinics or MRI Department in Hospitals. The school reserves the right to assign the student to any available Clinical Site. Clinical Internship sites are located according to affiliations and relationships formed between Aquarius Institute and community and Chicagoland companies/ organizations/facilities. And the clinical internship sites may be in excess of a 30 mile radius of Aquarius Institute's Des Plaines' campus.

PROGRAM OBJECTIVES: This course has been designed to meet the growing demand of Magnetic Resonance Imaging (MRI) Technologists in the field of Diagnostic Medicine. According to present job market analysis a large number of qualified individuals are required in the Medical Technologist field. The objectives of this course are to provide efficient and well trained MRI Technologist to satisfy the present day job market needs.

Vocational Objectives:

This program has been designed to meet the growing demand of Magnetic Resonance Imaging (MRI) Technologists in the field of Diagnostic Medicine. According to the present job market analysis, a large number of qualified individuals are required in the Medical Technologist field. The objectives of this program are to provide efficient and well trained MRI Technologist to satisfy the present day job market needs.

Program Learning Outcomes

Below are the learning outcomes that the MRI student must master in keeping with the program's mission and goals. These outcomes serve to guide the student toward fulfilling the program goals. They form the basis for measuring what the student has accomplished upon completion of the program. Upon completion of this Program, the graduate will be able to:

- To provide compassionate and responsible patient care during diagnostic procedures
- Use oral and written communication with patients, peers, and medical staff
- Produce diagnostic MRI Images safely and competently in the context of all MRI procedures
- Utilize critical thinking, problem solving, and decision-making skills in performing medical imaging procedures
- Successfully pass the completion examination given by the School and certification examination given by the MRI National Registry
- Possess the clinical skills necessary for professional practice as an entry-level MRI Technologist

Length of Program: One year of course work and 1000 hours of clinical internship (classroom and clinical internship combined may take in excess of 18 months to complete).

Program Outline:

<u>Course Title</u>	<u>Lecture Clock Hours</u>
I. Medical Terminology	40
II. Anatomy and Physiology	85
III. Patient Management	10
IV. MRI Safety	20
V. MRI Physics	60
VI. Cross-sectional Anatomy	85
VII. MRI Clinical Internship	1000

Held at Affiliated MRI Clinical Sites

Total Lecture Clock Hours: 300

FINANCIAL AID:

Aquarius Institute is approved to accept the Workforce Investment Act (WIA) funding for students. Aquarius Institute accepts some GI Bill and VA tuition payments. There are no other financial aid programs available.

TUITION & FEES:

Registration Fee	\$ 150
Text Books	\$500
Tuition Fee	\$ 12,500
Total Program Cost	\$ 13,150

Installment Payment Plan Option: \$2000 down payment followed by \$300 monthly payments. No interest is charged for using the installment method of payment.

Note: A late fee of \$10 per week applies to all installment payments not paid on schedule; see installment plan sheet for details

OTHER ESTIMATED COSTS:

Uniforms	\$50.00
Hepatitis Vaccine	\$100.00
Tuberculosis Test OR Chest X-ray	\$150.00
CPR Healthcare Provider Certification	\$75.00
Liability Insurance	\$37.00
Total Other Estimated Costs	\$412

Admission Requirements:

General Requirements:

- Minimum 18 years of age
- Proof of graduation from a U.S. High School or equivalent as determined by appropriate accrediting agencies
- Graduates from foreign schools require local evaluation
- Official High School Transcript and have a **Grade Point Average (GPA) of 2.5** or above
- Provide a current resume if applicable
- Must possess knowledge of computers; must be able to use word processing programs
- Complete a personal interview with the Job Developer

Health Requirements

- Students must submit obtain or have proof of a Hepatitis B vaccination, at the student's expense, 30 days prior to starting clinical internship (following acceptance into the program).
 - Must submit a doctor's note or titer result as proof or card for having Hepatitis B immunization.
 - Or have a signed refusal form in student's record
- Students must obtain malpractice insurance at the student's expense (following acceptance into the program)
- Students must have visual acuity, hearing acuity, speaking ability, digital dexterity and physical ability to perform the required assessment, procedures and related preparation and testing issues
- Students should have a reliable means of transportation
- Students must possess a valid CPR card prior to starting clinical internship
- If the potential student does not have a Tuberculosis (PPD) test then the student must obtain a 2 step Tuberculosis test (PPD), at the student's expense, before start of the clinical internship
- Students must submit a PPD result or if the previous PPD was positive the student must submit a chest x-ray as proof that student is clear from TB disease

Aquarius Institute is not accredited:

Aquarius Institute is not accredited by a U.S. Department of Education recognized accrediting body.

Aquarius Institute does not have any articulation Agreements:

Aquarius Institute does not have any articulation agreement with any college, organization, or facility.

Therefore the certificate or courses are not transferable to any other College, University or Institute. Please consult with any institute of higher learning you are applying to for their transfer requirements.

Credentials Received: Upon completion of the program (classroom and clinical internship) the student will receive a Certificate of Completion and Official Transcript from Aquarius Institute. Completion of the entire program is the prerequisite to take the National Registry/Licensing Exam provided by ARMRIT.

Program Instructor License Requirements: Instructors teaching the field specialty part of the program must be Registered/ Licensed/Certified per industry requirements.

Job Prospect:

MRI is becoming a widely accepted diagnostic procedure and there is a growing demand for qualified, well trained and efficient MRI Technologists.

Text Books:

1. Medical Terminology: A Living Language 5e

Author: Bonnie F. Fremgen, Suzanne S. Frucht
Publisher: Pearson Prentice Hall; Published – 2013
ISBN: 978-013-284347-8

2. Visual Anatomy & Physiology

Authors: Frederic H. Martini, William C. Ober, and Judi L. Nath
Publisher: Pearson; ISBN-10: 0321769376

3. Introduction To Radiologic Sciences and Patient Care

Author: Arlene Adler & Richard Carlton
Publisher: Elsevier; published - 2011
ISBN: 978 1437716467

4. MRI in Practice

Authors: Catherine Westbrook, Carolyn Kaut Roth & John Talbot
Publisher: Wiley - Blackwell Publishing; published - 2011
ISBN: 978 1444337433

5. Handbook of MRI Technique

Authors: Catherine Westbrook
Publisher: Wiley-Blackwell; published - 2008
ISBN: 9781405160858

6. Sectional Anatomy for Imaging Professionals

Authors: Lorrie L. Kelley, Connie M. Peterson
Publisher: Elsevier; published - 2013
ISBN: 978 0323082600

(Book Selection May Change Based On Availability and Instructor Recommendations)

Reference Books & Audio/Video Aid (These are optional and not included in program)

1. Introduction to Functional Magnetic Resonance Imaging: Principles and Techniques

Author: Richard B. Buxton
ISBN: 0521581133

2. MRI for Technologists

Author: Peggy Woodward
ISBN: 0071353186

3. Cardiovascular MRI and MRA

Authors: Charles B., MD Higgins, Albert De Roos, Helen J. Streubert
ISBN: 0781734827

4. Handbook of MRI Technique

Author: Catherine Westbrook
ISBN: 0632038845

5. MRI Parameters and Positioning
Authors: Torsten B., Md Moeller, Emil R. Reif
ISBN: 1588901491
6. Magnetic Resonance Imaging: Mathematical Foundations and Applications
Author: Walter Johannes Schempp
ISBN: 0471167363
7. Abdominal-Pelvic MRI
Author: Richard C. Semelka
ISBN: 047141476X
8. An Introduction to Functional Magnetic Resonance Imaging: Principles and Techniques
Author: Richard B. Buxton
ISBN: 0521581133
9. Atlas of Human Cross-Sectional Anatomy: With CT and MR Images
Author: Donald R. Cahill, Mayo Medical School, Rochester
ISBN: 0471591653
10. Cranial and Spinal MRI and CT
Authors: Seungho Howard Lee, Robert A. Zimmerman, Krishna C. Rao
ISBN: 0070376891
11. Foundations of Medical Imaging
Author: Z. H. Cho
ISBN: 0471545732
12. Interventional MRI
Author: Robert B. Lufkin
ISBN: 0815145454
13. MRI and CT of the Brain
Authors: James E. Gillespie, Alan Jackson
ISBN: 0340761210
14. MRI of the Head and Neck
Author: Robert B. Lufkin
ISBN: 0781725720
15. MRI of the Musculoskeletal System
Authors: Karence K. Chan, Mini Pathria
ISBN: 0781725712
16. The Language of Medicine; 10th Ed.
Author: Davi-Ellen Chabner
ISBN: 978-1-4557-2846-6

17. Understanding Anatomy and Physiology: A Visual, auditory. Interactive Approach

Author: Gale Sloan Thompson

Publisher: FA Davies Company

ISBN: 0803622876

18. Understanding Anatomy and Physiology WORKBOOK: A Visual, auditory. Interactive Approach

Author: Gale Sloan Thompson

Publisher: FA Davies Company

ISBN: 978 0803622883

MRI Journals for Reference Purpose:

- Applied Magnetic Resonance
- Concepts in Magnetic Resonance
- Diagnostic Imaging
- Free Full-Text Journals in Chemistry
- Imaging Decisions
- Journal of Magnetic Resonance
- Journal of Magnetic Resonance Imaging
- Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA)
- Magnetic Resonance in Medicine
- Topics in Magnetic Resonance Imaging

Reference Audio Video Material:

The School will establish a library of MRI related Audio and Video training programs to supplement the classroom training.

DETAILED COURSE OUTLINE

Course I: Medical Terminology

40 Lecture hours:

Each system will relate real-world applications

Introduction to Medical Terminology

Medical terminology at a glance; Building medical terms from word parts; Word roots (combining vowel/forms); Prefixes and Suffixes; Word building; Interpreting Medical Terms; Abbreviations which are given for each system; The Medical Record; Healthcare settings; Confidentiality

The Skeletal System

System illustrated; Anatomy and physiology; Bones; Skeleton; Joints; Terminology; Words used to build system; Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Body Organization

Body organization at a glance and illustrated; Levels of Body organization; Cells; Tissues; Organs and body systems; Body planes, regions, and body cavities; Directional and positional terms; Anatomical terms and abbreviations

The Muscular System

System at a glance and illustrated; Anatomy and physiology; Types of muscles; Skeletal muscle; Naming skeletal muscle

Terminology; Words used to build system; Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Urinary System

System at a glance and illustrated; Anatomy and physiology; Terminology and Anatomical terms; Pathology Diagnostic and therapeutic procedures; Pharmacology; Kidneys; Ureters; Urinary bladder; Urethra

Role of Kidneys in Homeostasis: Stages of Urine production; Terminology – words used to build system; Anatomical terms, Pathology; Diagnostic and therapeutic procedures

Blood and Lymphatic and Immune Systems

Systems illustrated; Anatomy and physiology of blood; Plasma and Platelets; Erythrocytes and leukocytes; Blood Typing; Anatomy and physiology for Lymphatic and Immune systems; Lymphatic vessels and Lymph nodes; Tonsils, spleen, and Thymus gland; Immunity; Terminology – words used to build systems; Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

The Cardiovascular System

System at a glance and illustrated; Anatomy and physiology; The heart; The blood vessels; Terminology - words used to build system; Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

The Respiratory System

System at a glance and illustrated; Anatomy and physiology: Nasal cavity, Pharynx, Larynx, Trachea; Bronchial tubes, lungs, lung volumes and capacities; Respiratory muscles and rate; Terminology - words used to build system; Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Nervous System

System at a glance and illustrated; Anatomy and physiology; Nervous tissue; Central nervous system; Peripheral nervous system; Terminology and Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Integumentary System

System at a glance and illustrated; Anatomy and physiology; Terminology and Anatomical terms; Pathology; Pharmacology; Diagnostic and therapeutic procedures

Reproductive System – Female

System at a glance and illustrated; Anatomy and physiology: Internal genitalia; Vulva; Breast; Pregnancy; Terminology and Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Reproductive System – Male

System at a glance and illustrated; Anatomy and physiology: External organs of reproduction; Internal organs of reproduction; Terminology and Anatomical terms; Pathology, Pharmacology; Diagnostic and therapeutic procedures

Endocrine System

System at a glance and illustrated; Anatomy and physiology: Adrenal glands, Ovaries, Pancreas, Parathyroid glands, Pineal gland, Pituitary gland, Testes, Thymus gland, Thyroid gland; Terminology and Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Special Senses: the Eye and Ear

The eye illustrated; Anatomy and physiology: The eyeball, Muscles of the eye, The eyelids, Conjunctiva, Lacrimal apparatus; How we see: Terminology and Anatomical terms, Pathology; Diagnostic and therapeutic procedures; Pharmacology;

The ear illustrated; Anatomy and physiology: External ear, Middle ear, Inner ear; How we hear: Terminology and Anatomical terms; Pathology; Diagnostic and therapeutic procedures; Pharmacology

Special Topics

Pharmacology; Drug names and classifications; How to read a prescription; Routes and methods of drug administration; Pharmacological terms

Mental Health at a glance

Disciplines; Psychology; Psychiatry; Pathology; Therapeutic Procedures

Diagnostic Imaging at a glance

Imaging, terms and procedures

Rehabilitation Services

Physical Therapy; Occupational Therapy; Terms; Procedures

Surgery at a glance

Anesthesia; Instruments; Surgical positions

Oncology at a glance

Oncology and staging tumors

Diagnostic and therapeutic procedures

Course II: Anatomy and Physiology

85 Lecture hours:

A& P in Perspective

Levels of Organization; Homeostasis; Anatomical Terms

Chemical Level of Organization

Atoms and molecules; Chemical reactions; The importance of water in the body; Organic compounds

Cellular Level of Organization

An introduction to cells; Structure and function of the nucleus; How things enter and leave the cell; Cell life cycle

Tissue Level of Organization

Epithelial tissues; Connective tissue; Muscle and neural tissue

Integumentary System

Functional anatomy of the skin; Accessory Organs of the skin

The Nervous System

Neurons and neuroglia; Neurophysiology

The spinal cord, spinal nerves, and spinal reflexes

The functional organization of the spine Cord; An introduction to reflexes

The Brain and Cranial nerves

Functional anatomy of the brain and cranial nerves; Sensory and motor pathways

The Special Senses

An introduction to the special senses: olfaction and gustation; Equilibrium and hearing; Vision

The Lymphatic System and Immunity

Anatomy of the Lymph system; Nonspecific defenses; Specific defenses

The Respiratory System

Functional anatomy of the respiratory system; Respiratory physiology

The Autonomic Nervous System

Functional anatomy and organization of the autonomic nervous system; Autonomic regulation and control mechanisms

The Skeletal System

Osseous tissue and bone structure

Introduction to the bones of the skeleton system; The physiology of bones

The Skeleton

Axial skeleton; Appendicular skeleton

Articulations

Joint design and movement; Articulations of the axial and appendicular skeletons

Skeletal Muscle Tissue

Functional anatomy of skeletal muscle tissue; Functional properties of skeletal muscle tissue

The Endocrine System

Hormones and intercellular communication; Hormones and system integration

Blood

Characteristics of Blood; Functional anatomy of blood vessels

The Heart and Cardiovascular function

The structure of the heart; Cardiac cycle; Coordination of cardiac output and peripheral blood flow

The Digestive System

General organization of the digestive system; The digestive tract; Accessory digestive organs

Metabolism and Energetics

An introduction to cellular metabolism; Digestion and metabolism of organic nutrients; Energetics and thermoregulation

The Reproductive System

Male reproductive system and the Female reproductive system

Development and Inheritance

An overview of Human development; Genetics and inheritance

The Urinary System

Anatomy of the urinary system; Overview of renal physiology; Urine storages and elimination

Fluid, electrolyte, and acid-base balance

Fluid and electrolyte balance; Acid-base balance

Course III: Patient Management

10 Lecture hours

Practice Standards for Radiography; Professional Organizations; State Licensing Agencies; Code of Ethics; The Patient Care Partnership: Understanding Expectations, Rights, and Responsibilities

Unit I: The Profession of Radiologic Technology

Introduction to Radiologic Technology; Professional Organizations; Educational Survival Skills; Critical Thinking and Problem Solving Strategies

Unit II: Introduction to the Clinical Environment

Introduction to Clinical Education; Radiology Administration; Radiographic Imaging; Radiographic and Fluoroscopic Equipment; Basic Radiation Protection and Radiobiology; Human Diversity

Unit III: Patient Care

Patient Interactions; History Taking Transfer Techniques; Immobilization Techniques; Vital Signs, Oxygen, Chest Tubes, and Lines; Infection Control Aseptic Techniques; Non-aseptic Techniques; Medical Emergencies; Pharmacology; Contrast Media and Introduction to Radiopharmaceuticals

Unit IV: Ethical and Legal Issues

Professional Ethics; Health Records and Health Information Management; Medical Law

Course IV: MRI Safety

20 Lecture hours:

Screening of Patients

Ancillary Equipment; Personnel; Biomedical Implants (e.g., pumps, aneurysm clips, pacemakers, etc.)

Assessment & Monitoring

Sedated Patients; Adverse Reactions to Contrast 3. Potential Biological; Effects; Life-Threatening Situations; Cryogen safety; Projectiles

Safety Precautions

Placement of Electrical Conductors (e.g., ECG leads, coils, cables); Environmental Considerations Temperature; Humidity; Gauss lines; Magnetic shielding; RF shielding; Posting of warning signs; Emergency Procedures; Equipment (e.g., quench, fire, etc.); Patient (e.g., Cardiac, Respiratory, etc.); Education (e.g., patients, visitors and hospital personnel)

Biological Considerations

Radio Frequency; FDA Guidelines; Specific Absorption Rate; Potential Biological Effects; Static Field Strength; FDA Guidelines; Potential Biological Effects; Gradient Field; FDA Guidelines; Time-Varying Magnetic Fields; Potential Biological Effects

Cause & Appearance of Artifacts

Aliasing; Gibbs, truncation; Chemical shift; Magnetic susceptibility; Radiofrequency; Motion & flow; Partial volume averaging; Crosstalk

Course V: MRI Physics

60 Lecture hours:

Basic principles

Introduction; atomic structure; motion in the atom; MR active nuclei; the hydrogen nucleus; alignment; precession; the Larmor equation; Resonance; the MR signal; the free induction decay signal (FID); relaxation, t1 recovery; T2 decay; pulse timing parameters

Image weighting and contrast

Introduction; image contrast; contrast mechanisms; relaxation in different tissues; T1 contrast; T2 contrast; proton density contrast; Weighting T2* decay; introduction to pulse sequences

Encoding and image formation

Encoding; introduction; gradients; slice selection; frequency encoding; phase encoding; sampling; data collection and image formation: introduction; K space description; K space filling; fast fourier transform (FFT); important facts about K space; K space traversal and gradient; options that fill K space; types of acquisition

Parameters and trade-offs

Introduction; signal to noise ratio (SNR); contrast to noise ratio (CNR); spatial resolution; scan time; trade-offs; decision making; volume imaging

Pulse sequences

Introduction; spin echo pulse sequences; conventional spin echo; fast or turbo spin echo; inversion recovery; fast inversion recovery; STIR (short tau inversion recovery); FLAIR (fluid attenuated inversion recovery); IR prep sequences; gradient echo pulse sequences: conventional gradient echo; the steady state and echo formation; coherent gradient echo; incoherent gradient echo (spoiled); steady state free precession (SSFP); balanced gradient echo; fast gradient echo; parallel imaging techniques

Flow phenomena

Introduction; the mechanism of flow; flow phenomena; time of flight phenomenon; entry slice phenomenon; intra-voxel dephasing; flow phenomena compensation: introduction; even echo rephrasing; gradient moment rephrasing (nulling); spatial pre-saturation

Artefacts and their compensation

Introduction; phase mismapping; aliasing or wrap around; chemical shift artefact; out of phase artefact (chemical misregistration); magnetic susceptibility artefact; cross-excitation and cross-talk; sipper artefact; shading artefact; Moiré artefact; magic angle

Vascular and cardiac imaging

Introduction; conventional MRI vascular imaging techniques; magnetic resonance angiography (MRA); cardiac MRI; cardiac gating; peripheral gating; pseudo-gating; multiphase cardiac imaging; Ciné; SPAMM

Instrumentation and equipment

Introduction; magnetism; permanent magnets; electromagnets; Superconducting electromagnets; fringe fields; Shum coils; gradient coils; radio frequency (RF); patient transportation system; MR computer systems and the user interface

MRI safety

Introduction; government guidelines; safety terminology; hardware and magnetic field considerations; radio frequency fields; gradient magnetic fields; the main magnetic field; projectiles; siting considerations; MRI facility zones; safety education; protecting the general public from the fringe fields; implants and prostheses; devices and monitors in MRI; pacemakers; patient considerations; safety policy; safety tips; reference

Contrast agents in MRI

Introduction; mechanism of action of contrast agents; molecular tumbling; dipole-dipole interactions; magnetic susceptibility; relativity; gadolinium safety; other contrast agents; current applications of gadolinium contrast agents; conclusion

Functional imaging techniques

Introduction; diffusion weighted imaging (DWI); perfusion imaging; susceptibility weighting (SWI); functional imaging (fMRI); interventional MRI; MR spectroscopy; whole body imaging; MR microscopy MRM)

Course VI: Cross-Sectional Anatomy

85 Lecture hours

Introduction to sectional anatomy

Cranium and facial bones

Cranium; facial bones; temporomandibular joint; paranasal sinuses; orbit

Brain

Meninges; ventricular system; cerebrum; diencephalon; limbic system; brainstem; cerebellum; cerebral vascular system; cranial nerves

Spine

Vertebral column; ligaments; muscles; spinal cord; plexuses; vasculature

Neck

Organs, muscles, vascular structures

Thorax

Bony thorax; pleural cavities; lungs; bronchi; mediastinum; lymphatic system; heart and vasculature; great vessels; coronary circulation; off-axis cardiac imaging; azygos venous system; muscles; breast; axilla

Abdomen

Abdominal cavity; Liver; gallbladder and biliary system; pancreas; spleen; adrenal glands; urinary system; stomach; intestines; abdominal aorta and branches; inferior vena cava and tributaries; lymph nodes; muscles of the abdominal wall

Pelvis

Bony pelvis; muscles; viscera; vasculature; lymph nodes

Upper Extremity

Shoulder; elbow; wrist and hand; neurovascular

Lower Extremity

Hips; knee and lower leg; ankle and foot; neurovascular

Spine

Cervical, thoracic, and lumbar spine; whole spine imaging

Course VII: MRI Clinical Internship and Quality Assurance Hours: 1,000

The last course in the MRI Technologist program is 1000 hours of mandatory MRI Clinical Internship at the School's affiliated Clinical Sites. The Aquarius Institute is committed to excel the excellence in the MRI Technologist Program. The Institute will implement, evaluate and monitor the Quality Assurance both in the didactic and clinical training aspects of the program. Clinical studies will be performed under the supervision of the Qualified MRI Technologist and will be supervised by the School's assigned Clinical Supervisor. Students' entry and exit times will be recorded and signed by a designated clinical staff member. Students' will be provided with the procedure recording sheets to be used to record each procedure either observed, assisted or performed by a student. After the completion and attestation by the Clinical Supervisor, a copy of completed Procedure Recording Form will be submitted to the School official for record purpose.

Students are required to strictly follow the Policies and Procedure listed in the MRI Clinical Training Handbook. Clinical Supervisor and MRI Program Director will strictly monitor the clinical participation of the students to maintain and enhance the excellence in MRI Clinical Internship Program.

ARMRIT Accredited School:

Aquarius Institute was approved by ARMRIT since the 2004 calendar year. The MRI Technologist program instructed at the Aquarius Institute fulfills the ARMRIT requirements to take the ARMRIT Registry Certification Exam. After successfully completing the MRI Technologist program, Aquarius Institute students will be awarded with a certificate of completion and an official transcript. Students then need to submit their application for the ARMRIT exam along with their Aquarius Institute credentials to become eligible for the ARMRIT exam. Aquarius Institute is accredited by ARMRIT, **however ARMRIT is not accredited by a U.S. Department of Education recognized accrediting body.**

Effective June 27, 2012:

Aquarius Institute has received Full Accreditation of the MRI Program from ARMRIT. Effective dates are as of June 27, 2012 and good through June 2015.

Aquarius Institute is not accredited:

Aquarius Institute is not accredited by a U.S. Department of Education recognized accrediting body.

Aquarius Institute does not have any articulation Agreements:

Aquarius Institute does not have any articulation agreement with any college, organization, or facility.

Therefore the certificate or courses are not transferable to any other College, University or Institute. Please consult with any institute of higher learning you are applying to for their transfer requirements.

Institutional Disclosures Reporting Table

Reporting Period: July 1, 2011 – June 1, 2012

INSTITUTION NAME: Aquarius Institute	Indicate all ways the disclosure information is distributed or made available to students at this institution: <input checked="" type="checkbox"/> Attached to Enrollment Agreement <input checked="" type="checkbox"/> Provided in Current Academic Catalog <input type="checkbox"/> Reported on School Website <input type="checkbox"/> Other: _____
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Per Section 1095.200 of 23 Ill. Adm. Code 1095:

The following information must be submitted to the Board annually; failure to do so is grounds for immediate revocation of the permit of approval.

DISCLOSURE REPORTING CATEGORY	<i>Magnetic Resonance Imaging (MRI) Technologist</i>	<i>Ultrasound/Sonography Technician</i>	<i>Medical Administrative Assistant, Phlebotomy, EKG</i>	<i>Insert Name of Program or Course of Instruction Here</i>	<i>Insert Name of Program or Course of Instruction Here</i>
A) For each program of study, report:					
1) The number of students who were admitted in the program or course of instruction* as of July 1 of this reporting period.	22	17	4		
2) The number of additional students who were admitted in the program or course of instruction during the next 12 months and classified in one of the following categories:					
a) New starts	26	32	4		
b) Re-enrollments	0	0	0		
c) Transfers into the program from other programs at the school	0	0	0		
3) The total number of students admitted in the program or course of instruction during the 12-month reporting period (the number of students reported under subsection A1 plus the total number of students reported under subsection A2).	48	49	8		
4) The number of students enrolled in the program or course of instruction during the 12-month reporting period who:					
a) Transferred out of the program or course and into another program or course at the school	0	0	0		
b) Completed or graduated from a program or course of instruction	6	3	4		
c) Withdrew from the school	4	2	0		
d) Are still enrolled	12	12	0		
5) The number of students enrolled in the program or course of instruction who were:					
a) Placed in their field of study	0	2	0		
b) Placed in a related field			3		
c) Placed out of the field					
d) Not available for placement due to personal reasons					
e) Not employed					
B1) The number of students who took a State licensing examination or professional certification examination, if any, during the reporting period.	0	3	0		
B2) The number of students who took and passed a State licensing examination or professional certification examination, if any, during the reporting period.	0	2	0		
C) The number of graduates who obtained employment in the field who did not use the school's placement assistance during the reporting period; such information may be compiled by reasonable efforts of the school to contact graduates by written correspondence.	0	1	0		
D) The average starting salary for all school graduates employed during the reporting period; this information may be compiled by reasonable efforts of the school to contact graduates by written correspondence.	25	20	15		

Information Updated: April, 2013

*Course of Instruction is defined as a stand-alone course that meets for an extended period of time and is directly creditable toward a certificate or other completion credential; individual courses that make up a Program of Study are not considered courses of instruction.

Note: As indicated in the PBVS Administrative Rules, Section 1095.200, student retention and graduation rates must be maintained that are appropriate to standards in the field. Furthermore, a State licensing examination or professional certification examination passage rate of at least 50% of the average passage rate for schools within the industry for any State licensing examination or professional certification examination must be maintained.

- In the event that the school fails to meet the minimum standards, that school shall be placed on probation.
- If that school's passage rate in its next reporting period does not exceed 50% of the average passage rate of that class of schools as a whole, then the Board shall revoke the school's approval for that program to operate in this State. Such revocation also shall be grounds for reviewing the approval to operate as an institution.

MAGNETIC RESONANCE IMAGING (MRI) TECHNOLOGIST
PROGRAM CATALOG

MC – 900 CIP Code 51-0920

Call 1-847-296-8870 and let the Aquarius Institute create
a course plan for your company

or visit www.aquariusinstitute.com for more information.

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1-773-604-4305

*Aquarius
Institute*

