

# **HARRISHEALTH SYSTEM**

School of Diagnostic Medical Imaging

# Student Handbook

Revised June 2021

## Table of Contents

Absences (PTO and Non-PTO)	21-22
Absent/ Without Notification	22
Academic Progress	13
Accreditation	7
Administration, Faculty, Staff And Advisors	9
Administrative Committee	10
Admissions	15
Advanced Placement	18
Americans with Disabilities	35
Attendance Policy	19
Attendance Notifications	20
Availability Of Standards/Complaint Resolution	33
Bereavement Leave	24
Breaks	39
Capstone	14
Clinical Assignments/Schedules	38
Clinical Capstone	48
Clinical Competency Evaluation	47
Clinical Competency	46
Clinical Education Evaluation	44
Clinical Education Grade Distribution	49
Clinical Education Records	48
Clinical Education	40
Clinical Education Syllabi (Radiography)	63
Clinical Education Syllabi (Sonography)	76
Clinical Education Performance Evaluations by Faculty	45
Clinical Responsibilities And Objectives	55
Clinical Site Affiliation	42
Code Red (Fire Safety)	30
Confidentiality Of Student Records	37
Conflict Resolution	44

Court Appearances	24
Credit Hours	13
Ethics Clearance	18
Curriculum	41
Delinquent Competencies	47
Didactic and Clinical Evaluations	12
Direct Supervision	43
Disciplinary Action with Definitions (Permissible and Impermissible Incidents)	31
Dosimeter Replacement	28
Dress Code (Uniform, Shoes, Lab Coat)	25
Early Departure	20
Employment	35
Exam Summary/ Clinical Skill	49
Examination Log	49
Failed Clinical Capstone (Radiography)	48
Failed Competency Evaluation	47
Grading	12
Graduation Requirements	13
Due Process -Grievance Procedure	33
Harris Health System Department Of Public Safety (Criminal Offense)	30
Harris Health Policies	34
Health & Healthcare Services	35
Holidays	20
Identification Badge	26
Illness	23
Immediate Dismissal	32
Inclement Weather	23
Indirect Supervision	43
Infection Prevention	30
Injury	23
Introduction	6
Jury Duty	24
Late	20

Learning Resources	38
Leave Of Absence and Instances	23
Lunch	39
Magnetic Resonance Imaging Safety Screening	30
Make Up Time	22
Materials Safety Data Sheets (MSDS)	30
Mission (Harris Health System and School)	10
Nondiscriminatory Statement	15
Onboarding	18
OSHA Standards	30
Parking	35
Payment Options	19
Performing the Competency-Steps to Achieve Competency	47
Philosophy	10
Physical Limitations	23
Policy Making And Administration	9
Pregnancy Policy	29
Pre-requisites for Admission	16
Professional Conduct	26
Professional Liability Insurance	38
Program Effectiveness and Outcomes	12
Program Evaluation	11
Program Descriptions	11
Program Goals	10
Program Length	11
Program Schedule	12
Radiation Monitoring Guidelines	27
Radiation Monitoring Records	29
Radiation Protection Policy	28
Radiography Curriculum and Credit Hours	51
Radiography Course Descriptions	51
Re-Admission & Re-Admission Conditions	19
Record Keeping and Availability of Records	36

Refund	19
Repeat Coursework: (Clinical Only)	13
Repeat Medical Images	43
Safety	27
Safety and Environmental Health	30
School Hours	19
ServiceFIRST Interaction Standards	26
Sleeping	34
Smoking	34
Solicitation And Distributions	34
Sonography Clinical Responsibilities and Objectives	74
Sonography Competencies by Semester	76
Sonography Course Descriptions	71
Sonography Curriculum and Credit Hours	70
Sonography Principles & Instrumentation (SPI) Examination Requirements	14
Student Advisement	13
Student Evaluation	12
Student Selection	17
Student Services	34
Student Supervision	43
Technical Performance Standards	15
Telephone/Cell Phone Usage	34
Terminal Competencies	14
Terminal Competency Radiography Specific	15
Terminal Competency Sonography Specific	15
Trajecsys Reporting System	38
Transfer Of Credit	16
Tuition Policy	18
Tutoring	13
Veterans Administration (VA) Education Benefits	19
Welcome	10
Withdrawal	19
Appendix I Radiography Curriculum	51

## INTRODUCTION

The general intent of the student handbook is to establish policies that serve as general guidelines to students of Harris Health System School of Diagnostic Medical Imaging. It was prepared to set forth policies and procedures established to assist in the orientation of medical imaging students. The administration of Harris Health System School of Diagnostic Medical Imaging is governed by the student handbook and the employee handbook.

The understanding of this handbook is the responsibility of the student, and the student must use it as a reference during the entire enrollment period. The handbook is not intended to supersede any state or federal law regulations.

Students are encouraged to submit recommendations, additions, or modifications to the school office. The Handbook Committee will consider all recommendations.

The School reserves the right at any time to modify, delete, or add to any part of this handbook.

## ACCREDITATION



Harris Health System is accredited by DNV Healthcare Inc.  
400 Technecenter Dr. Suite 100  
Milfrod, Ohio 45150  
513-747-8334 [www.dnvaccreditation.com](http://www.dnvaccreditation.com)



JOINT REVIEW COMMITTEE  
ON EDUCATION IN  
RADIOLOGIC TECHNOLOGY

The Harris Health System School of Diagnostic Medical Imaging/ LBJGH  
The program is accredited by Joint Review Committee on Education in Radiologic Technology (JRCERT)

Joint Review Committee on Education in Radiologic Technology  
20 N. Wacker Drive, Suite 2850  
Chicago, IL 60606-3182 (312) 704-5300 Email: [www.jrcert.org](http://www.jrcert.org)

### Certification Agency



THE AMERICAN REGISTRY  
OF RADIOLOGIC  
TECHNOLOGISTS®

## ACCREDITATION



The Harris Health System School of Diagnostic Medical Imaging is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS)

Commission on Accreditation of Allied Health Education Programs

25400 U.S. Highway 19 North, Suite 158

Clearwater, FL 33763

Phone: 727-210-2350

Fax: 727-210-2354

[www.caahep.org](http://www.caahep.org)



### **JRC-DMS**

6021 University Boulevard

Suite 500

Ellicott City, MD 21043

443-973-3251 [jrcdms.org](http://jrcdms.org)

### **Certification Agency**





### **POLICY MAKING AND ADMINISTRATION**

The policies and direction of the School of Diagnostic Medical Imaging are maintained through advisory and administrative committees. These committees are responsible for determining the program's general philosophy, goals, curriculum, criteria used in the selection process, and for advising the program director as required.

Students are governed by the policies of the School, the policies of the Radiology Department and the policies of Harris Health System.

### **ADMINISTRATION: FACULTY, STAFF AND ADVISORS**

Cleveland Black, EdD, RT(R)(CT)(MR)(ARRT)	Administrative Director of Education/Faculty - Advisor
Georgette Shepherd, BHSc, RT(R)(M)(ARRT), ARDMS, AB, BR, OB/GYN	Sonography Program Director/Faculty - Advisor
John Donahue, MSRS, RT(R)(CT)(ARRT)	Interim Radiography Program Director/ Faculty - Advisor
Zita Witte MD	Medical Director – Advisor
Wilson Phung, BA, RT, (R)(MR)(ARRT)	Faculty/ Clinical Coordinator- Advisor
Hazel Bourne, MS, RT(R) (M) (CT) (ARRT)	Faculty/ Clinical Coordinator- Advisor
James Norsworthy, ARDMS AB, RVT, VT RT (R)(ARRT)	Faculty/ Clinical Coordinator- Advisor Interim Sonography Program Director/Faculty - Advisor
Aarti Patel, ARDMS, AB, OB/GYN	Faculty/ Clinical Coordinator- Advisor
Sharonda Adkins, BSRS, RT (R)(ARRT)	Clinical Faculty- Radiography Advisor/ Aldine
Gwen Alexander, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/LBJ
Ernest Jerez, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor / LBJ
Moises Hernandez, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/BT
Gracy Koshy, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor / Smith
Annamma Kuriakose, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/ BT
Kimberly Jackson, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/ Casa De Amigos

Norma Martinez, AA, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/ El Franco Lee/ Vallbona
Dalia Vazquez, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/LBJ
Demetria West, RT (R)(ARRT)	Clinical Faculty – Radiography Advisor/ MLK
Steven Fontenot, RT (R)(VI)(ARRT)	Clinical Faculty - Radiography/Sonography IR/ BT
Matthew Owen, RT (R)(VI)(ARRT)	Clinical Faculty - Radiography/Sonography IR/ BT
Lalitha Valleru, RT (R)(ARRT)	Clinical Faculty - Radiography/Sonography IR/ LBJ
Tony Thomas, RT(R)(CT)(MR)(ARRT)	Clinical Faculty – Radiography Advisor / LBJ
Nancy Allen, ARDMS AB	Clinical Faculty – Sonography Advisor/ BT
James Bedi, ARDMS AB, OB/GYN, RVT, VT	Clinical Faculty – Sonography Advisor/ LBJ
Sangita Doshi, ARDMS OB/GYN	Clinical Faculty - Advisor/BT MFM
Tony Tran, RDMS,AB,OB/GYN	Clinical Faculty - Advisor /LBJ MFM
Shana Lee, RT(R), ARDMS, AB, OB/GYN	Clinical Faculty - Advisor / Smith Clinic
Terri Vu, ARDMS Ab, BR, OB/GYN	Clinical Faculty - Advisor / Smith Clinic

**ADMINISTRATIVE COMMITTEE:**

- Cleveland Black, Ed.D, RT(R)(CT)(MR)(ARRT)
- John Donahue, MSRS, RT(R)(CT)(ARRT)
- James Norsworthy, ARDMS AB, RVT, VT RT (R)(ARRT)

**Purpose of administrative committee:**

The purpose of the administrative committee is to assure the effective organization and operation of the school’s selection and admission’s process, disciplinary process and overall program success.

**WELCOME**

Diagnostic Imaging Technologists are healthcare professionals educated in the use of sound waves (sonography) and ionization radiation (radiographers) who work in a technically advanced environment. Sonographers and Radiographers are exposed to a variety of patients, including the critically ill and injured. Individuals interested in pursuing a career in radiography must possess compassion and the desire to work with advanced technology.

**MISSION**

Harris Health is a community-focused academic healthcare system dedicated to improving the health of those most in need in Harris County through quality care delivery, coordination of care, and education.

**SCHOOL OF DIAGNOSTIC MEDICAL IMAGING MISSION**

The mission of the Harris Health System School of Diagnostic Medical Imaging is to educate the next generation of competent entry-level imaging professionals

**PHILOSOPHY**

Imaging students are charged by the professional Standards of Ethics to be competent, compassionate, and knowledgeable. At Harris Health System, we recognize the importance of integrating training in the cognitive, psychomotor, and affective domains as a means to this end. We are compelled to practice,

promote, and reward excellence and professionalism to adequately prepare graduates to be competitive in the local and national health care arenas.

<https://www.arrt.org/pdfs/Governing-Documents/Standards-of-Ethics.pdf>

<http://www.sdms.org/about/who-we-are/code-of-ethics>

### **Radiography Program Goals and student learning outcomes**

**Goal 1:** Students will be clinically competent

Student Learning Outcomes:

- Students will perform entry-level imaging procedures
- Students will demonstrate entry-level patient care skills
- Students will demonstrate knowledge of ALARA

**Goal 2:** Students will demonstrate professionalism and lifelong learning.

Student Learning Outcomes:

- Students will display professional behavior.
- Students will pursue higher education.

**Goal 3:** Students will communicate on a professional level.

Student Learning Outcomes:

- Students will demonstrate effective oral communication.
- Students will demonstrate effective written communication.

**Goal 4:** Students will demonstrate critical thinking skills.

Student Learning Outcomes:

- Students will critique images to determine image quality.
- Students will perform unfamiliar exams with appropriate supervision.

### **Sonography Program goals**

“To prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains”

## **PROGRAM DESCRIPTIONS**

### **Radiography Program**

Is a hospital-based advanced imaging program that is 2 years in length and is accredited by the Joint Review Committee on Education in Radiologic Technology ([www.JRCERT.org](http://www.JRCERT.org)). A new class will commence each July with class space limited not to exceed program capacity. Classroom and clinical education is offered Monday through Friday, 7- 3pm. Didactic Classes are offered at 4800 Fournace. Clinical education is offered at Ben Taub and Lyndon B. Johnson hospitals with 6 Ambulatory Care Centers.

### **Sonography Program**

Is a hospital-based advanced imaging program that is 22 months in length and is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)). A new class will commence each July with class space limited for 16 students. Classroom and clinical education is offered Monday through Friday, 7- 3pm. Didactic Classes are offered at 4800 Fournace. Clinical education is offered at the Ben Taub, Lyndon B. Johnson hospitals and Smith clinic.

## PROGRAM EVALUATION

The program determines and maintains effectiveness through a broad based and integrated system of evaluation and planning. The program solicits the opinions of communities of interest through surveys which are reviewed and utilized to improve student learning outcomes.

Communities of interest include, but are not limited to:

- Students
- Graduates
- Faculty
- Clinical Staff
- Employers
- Accrediting agencies (JRCERT, JRCEDMS)
- Credentialing agencies (ARRT, ARDMS)

### Program length

The program is divided into didactic and clinical components.

- The program begins each year:
  - July/ Radiography
  - July/ Sonography
- The program is divided into:
  - Six semesters/ Radiography
  - Six semesters/ Sonography
- The second year of the program begins in June.
- The program ends mid-May

### Program schedule (Fall and Spring semesters)

Student	Didactic (Class)	Clinic
<b>Junior (1<sup>st</sup> year)</b>	Monday, Wednesday, Friday	Tuesday, Thursday
<b>Senior (2<sup>nd</sup> year)</b>	Tuesday, Thursday	Monday, Wednesday, Friday

### Student evaluation

It is our desire that all students successfully complete the course work.

To evaluate each student's progress, evaluation and counseling is an ongoing process throughout the program for both the didactic and clinical education.

### Didactic evaluations

Didactic education is evaluated through

- Written exams
- Lab evaluations
- Assigned activities
- Didactic Capstone (Radiography)

### Clinical evaluations

Clinical education is competency-based. Performance is evaluated throughout the program.

Evaluation in clinical education consists of:

- Performance evaluations
- Competency evaluations

- Examination Logs
- Clinical Capstone (Radiography)

### Grading

Students must receive a minimum of a “C” in each course to satisfy graduation requirements. All course grades are used to determine the student’s overall GPA. The following grading system is used throughout the program:

Letter Grade	Numerical Grade	Grade Points
A	94-100	4.0
B	86-93	3.0
C	76-85	2.0
F	Below 76	0.0

### Credit hours

One credit hour equals a minimum course time of:

- 16 contact hours semester = 1 credit hour
- 2 contact hours lab/week = 1 credit hour
- 8 contact hours clinical/week = 1 credit hour

### Student advisement

The students are advised concerning academic and behavioral performance and progress. Strengths and weaknesses are addressed. Students who are not progressing as expected are advised on methods of improving.

Advisement occurs at:

- Mid semester
- End of semester
- End of the first year

### Academic progress

Satisfactory:

- Passing all courses with a grade of C or higher

Unsatisfactory:

- Failing 1 or more courses
  - Student will be withdrawn from the program.

### Tutoring

Tutoring is available to all students in all coursework. Tutoring is scheduled by course instructor.

### Repeat coursework: (clinical)

In extenuating circumstances where a student has physical limitations following a leave of absence (LOA) the student will repeat the clinical course during the summer semester following graduation.

The program must be completed within 150% of the published program length.

### Graduation requirements

A certificate of completion is awarded when all program requirements have been satisfied. To graduate, students must satisfy all program requirements.

All students must:

1. Pass all coursework with a minimum grade of ‘C’ (76).

2. Pass the Sonography Principles & Instrumentation (SPI) Examination (Sonography students only) by December 31 of the second year enrollment.
3. Satisfying the requirements of the competency based clinical education plan.
4. Satisfy the terminal competency objectives.
5. Complete the program within 150% of the published program length (3 years).
6. Pay tuition and fees in full.
7. Make up all time missed.
8. Satisfactorily complete clinical and didactic Capstone evaluations. (Radiography students only)
9. Satisfy program accreditation and certification requirements.
10. Schedule an exit interview on the last day of enrollment.
11. Return the following:
  - Hospital Identification
  - Radiation Monitor
  - Zero balance from the Harris Health system Imaging School.

### **Capstone**

Capstone is a comprehensive examination completed during the senior year consisting of two parts, didactic and clinical.

- Didactic Capstone
  - The didactic capstone is a comprehensive computer-based examination. All students must pass didactic capstone to graduate.
- Clinical Capstone (Radiography)
  - The clinical capstone is a comprehensive assessment in which students demonstrate essential radiographic procedures. All students must pass clinical capstone to graduate.

### **Sonography Principles & Instrumentation (SPI) examination (sonography)**

Students are required to register for Sonography Principles & Instrumentation (SPI) examination after the second semester.

- A student must pass the SPI exam before December 31 of their senior year to register for the final review (6<sup>th</sup>) semester.

### **Terminal Competencies**

Upon completion, the student should be able to perform the following functions and behaviors essential to entry-level medical imaging:

1. Use professional terminology when interacting with health care professionals.
2. Communicate with patients to determine the patients' needs.
3. Interpret requisitions.
4. Modify standard procedures to accommodate for patients who are unwilling or unable to cooperate.
5. Accurately demonstrate knowledge of human structure and function.
6. Demonstrate the proper use of immobilization devices.
7. Demonstrate knowledge of pathology and recognize common disease processes on images.
8. Demonstrate methods of patient identification and accurately perform the procedures requested.
9. Demonstrate methods of patient transfer and good body mechanics.
10. Demonstrate knowledge of methods of disinfection and sterilization.
11. Demonstrate knowledge of standard precautions and various methods of isolation.
12. Accurately monitor vital signs.
13. Recognize emergency patient conditions and initiate first aid and basic life support.

14. Anticipate and provide basic patient care and comfort.
15. Operate imaging equipment, fixed and mobile, and accessory devices.
16. Assist the radiologist or attending physician in performing special procedures.
17. Evaluate the performance of imaging systems; recognize the safe limits of operation and report malfunctions to the supervisor.
18. Demonstrate knowledge of the basic components of the control panel of imaging equipment.
19. Adapt exposure factors to compensate for various patient conditions, equipment, accessories to maintain appropriate image quality.
20. Perform basic mathematical functions.
21. Process images and utilize quality control measures to achieve and maintain acceptable image quality.
22. Evaluate images for optimal image quality (technique, positioning).
23. Exercise independent judgment and discretion in performing medical imaging procedures.
24. Demonstrate knowledge of the established practice standards and recommendations for “As Low As Reasonably Achievable” (ALARA).
25. Demonstrate knowledge of the basic functions of the computer.
26. Agree to practice medical imaging according to the *Standards of Ethics*.

### **Terminal competency radiography specific**

1. Differentiate between injectable and non-injectable contrast media and demonstrate knowledge of uses and precautions for common medications used.
2. Demonstrate knowledge of digital imaging equipment.
3. Demonstrate knowledge of the electronics of the x-ray generator to include circuitry and equipment variables.
4. Demonstrate knowledge of the use of image receptors and accessories and compensate for any changes.
5. Demonstrate knowledge and use of appropriate methods of patient protection to include adequate gonadal shielding for male patients, for women of childbearing age and for pediatric patients.
6. Modify exposure factors to increase patient protection.
7. Demonstrate knowledge and proper use of filtration, beam restriction devices, patient positioning and shielding devices to protect the patient from unnecessary ionizing radiation.
8. Demonstrate knowledge of dose effects to include genetic dose indicators, somatic dose indicators and adverse biological effects.
9. Demonstrate knowledge of personnel protection to include time, distance and shielding during radiography and fluoroscopy.
10. Demonstrate knowledge of the basic properties of radiation.
11. Demonstrate knowledge of ethical and professional responsibilities to practice and provide adequate radiation protection.
12. Demonstrate knowledge of methods of radiation monitoring.
13. Demonstrate knowledge of the established standards and recommendations from National Council on Radiation Protection and Measurements (NCRP).

### **Terminal competency sonography specific**

1. Demonstrate knowledge of the basic properties of ultrasound.
2. Demonstrate knowledge of acoustic energy bio effects.
3. Demonstrate knowledge of ethical and professional responsibilities to practice medical ultrasound.

## **ADMISSIONS CRITERIA AND SELECTION PROCESS**

### **Nondiscriminatory Statement**

It is the policy of the Harris Health System School of Diagnostic Medical Imaging to provide equal educational opportunities for all applicants regardless of an individual's sex, race, color, religious creed, age, national origin, disability, or other legally protected characteristic.

### Technical performance standards

Students accepted into the program must be physically capable of successfully performing the following standards accurately and expeditiously. These standards are related to occupational safety.

1. Lift, move and transport patients (from bed to wheelchair/stretchers or from wheelchair/stretchers or examination table) without causing injury and discomfort to the patient or self.
2. Properly position the patient.
3. Manipulate imaging equipment (fixed and mobile units) into correct positions.
4. Transport mobile equipment carefully to assigned areas of the hospital in a safe timely manner.
5. Respond instantly to emergency situations.
6. Evaluate written requisitions for imaging procedures.
7. Explain imaging procedures and give effective instructions to patients.
8. Obtain medical history from patient and communicate this information to the radiologist.
9. Evaluate images in relation to technical factors, image quality, and proper positioning.

### Transfer of Credit

Students whose academic goal is to obtain an undergraduate degree should check with the institution before enrolling in this program.

1. Students transferring to a college or university
  - Institutions of higher learning award credit for coursework completed to graduates who have successfully completed the ARRT/ARDMS examination. The credit awarded is based on the institution's admission policies and practices and is awarded at the discretion of the institution. Students transferring from a radiography program
2. The imaging programs do not accept students transferring from other imaging programs.

### Applicant Requirements for Program Eligibility

1. Be 18 years old by July 1<sup>st</sup> of the year of application.
2. Be a U.S. citizen or permanent resident at the time of application. Proof of U.S. citizenship or permanent residence is required.
3. Have a minimum of an Associate's Degree from an accredited college or university. Alternative qualification for **Sonography ONLY** includes graduation from an approved U.S healthcare related program and licensure.
4. Complete required prerequisite coursework for desired program (see below).
5. Attend an information session.

Prerequisites for Sonography	Prerequisites for Radiography*
Algebra or other higher mathematics course, or statistics course offered from math dept (3 credit hrs minimum)	Algebra or other higher mathematics course, or statistics course from math dept (3 credit hrs minimum)
Communication skills (may be met by English, speech, composition, or related course) (3 credit hrs minimum)	Communication skills (may be met by English, speech, composition, or related course) (3 credit hrs minimum)
Anatomy and physiology (3 credit hrs)	Anatomy and physiology (3 credit hrs)



minimum)	minimum)
General college-level physics and/or radiographic physics (3 credit hrs minimum)	Social/behavioral science (3 credit hrs minimum)
Medical terminology	Arts and humanities (3 credit hrs minimum)

\* **Radiography students only: Transfer Students (Conditional Eligibility)** When space is available, the transfer student applicants may be considered for selection and conditionally accepted and enrolled. Transfer student applicants are considered conditionally eligible if they will complete admission requirements that include prerequisites, minimum 2.5 Cumulative GPA and degree by the end of the initial fall semester of the program.

Failure to complete degree or prerequisite requirements, or failure to maintain an eligible GPA with the addition of the conditional coursework, could result in administrative dismissal from the program.

For applicants who do not satisfy the degree requirement, the program can assist them in obtaining a degree through an articulation agreement with St Joseph's College of Maine (SJCME).

- Application and additional information is available at <https://www.arrt.org/partners/schools-educators/accreditation>
  - Applicants must:
    - Submit general application for admission to SJCME and Harris Health System.
    - Complete the prerequisite coursework
    - Transfer SJCME credits to satisfy prerequisites for Harris Health System School of Diagnostic Medical Imaging
    - Complete radiography program requirements at Harris Health System

6. Have a cumulative GPA of 2.5 or higher on a 4.0 scale.
  - a. Must provide transcripts from all colleges attended. Send official transcripts directly.
  - b. All credits and grades from all colleges are included to calculate a cumulative GPA using a Transcript Calculator.
  - c. Applicants with foreign transcripts must have academic credentials evaluated for U.S. equivalency by an education consulting service (i.e. SpanTran) and submit an official copy directly to the program. The evaluation must include all credits, grades, and overall GPA.
7. Submit a nonrefundable \$75 application fee in the form of a money order or cashier's check only.
8. Be capable of successfully performing tasks related to the occupation.

Applicants who complete application, pay application fee, and send transcripts will each be evaluated for program eligibility. All eligible applicants will be considered for selection.

For more information regarding a program, or about your specific eligibility status, you may attend one of our regular information sessions, which are held the second Tuesday of each month at 5 pm, or schedule an informational/eligibility consultation with a program director.

### Student Selection

Applicants are selected for admission using the following information:

1. A completed application and application fee

- a. Official transcripts - academic performance
- b. Essay
- 2. Interview
  - a. Interview panel - behavioral interview questions

### **Selection Process**

1. Following determination of applicant eligibility, the essay portion of the application is evaluated.
2. Based on essay evaluation, applicants may be invited to schedule an interview with the Selection Committee.
3. Applicants are evaluated on a rolling basis, with interviews occurring regularly throughout the year. The Admission process occurs at the following timeframes:
  - a. Application Deadline for Early Admissions: September 15 (notified by October 15)
  - b. Application Deadline for Regular Admissions (*if space available*): January 15 (notified by February 15)
  - c. Application Deadline for Late Admissions (*if space available*): March 15 (notified by April 15)
4. Notification of admissions
  - a. Accepted students will be notified in writing no later than April 15<sup>th</sup>.
  - b. Return acceptance letter with \$150 non-refundable administrative fee.

### **ARDMS or ARRT Ethics Clearance required**

If you have been convicted in court of a misdemeanor, felony (including conviction of a similar offense in a military court-martial) you will need pre-clearance from ARRT or ARDMS.

You are required to report:

- Charges of convictions that were stayed, withheld/deferred, set aside, or suspended;
- Any plea of guilty, Alford plea, or plea of no contest (nolo contendere);
- Court supervision, probation, or pre-trial diversion.

<https://www.arrt.org/docs/default-source/ethics/Ethics-Checklist-Criminal-Violation.pdf?sfvrsn=34>

<https://www.ardms.org/wp-content/uploads/pdf/Pre-application-Criminal-ARDMS.pdf>

### **Onboarding process**

Harris Health System's Human Resources Department (HR) all applicants selected for admission. The process includes (at no cost to the applicant):

- A general physical examination conducted by Harris Health
- Background check
- Drug screening
- Harris Health System general orientation
- CPR certification

### **Advanced Placement**

The program is no longer accepting advanced placement application as of May 2020.

\*ARRT to Discontinue Advanced Placement Option On Dec. 31, 2021, ARRT will stop accepting advanced placement applications for the primary eligibility pathway for students who have previous experience and want to earn an ARRT credential.

<https://www.arrt.org/news/2020/01/27/arrt-to-discontinue-advanced-placement-option>

- The radiography program does not offer advanced placement.

- The sonography program does not offer advanced placement.

### **Tuition Policy**

Tuition is due before the first day of the semester. Payment options are available by request.

Tuition and Fees:

1. Tuition costs are subject to change.
2. Tuition does not include laptops, books, uniforms, housing, transportation or parking.
3. All students pay a one-time, non-refundable \$150.00 fee at the beginning of the program.
4. Students residing outside of Harris County must add \$50.00 per semester.
5. Non-Texas residence or those who have lived in Texas less than one year must add \$200 per semester.
6. Tuition must be paid during the registration period before the first day of the semester.

### **Payment Options**

Option 1:

Tuition may be paid in full before the first day of class.

Option 2:

Payment plan is available. Installment fees will apply.

Students who fail to pay tuition by the deadlines will not be allowed to attend class, and will be required to make up time missed in accordance with the attendance policy.

### **Veterans Administration (VA) Education Benefits**

- Students receiving VA education benefits must provide transcripts of **all** post-secondary education completed.

### **Refund**

A student who officially withdraws during the first ten days of the program will be refunded 100% of the tuition paid.

- After the tenth day, tuition will not be refunded.

### **Withdrawal**

A student who withdraws from the program may be eligible for readmission for the following academic year, providing classroom, clinical and program capacity are available.

The Student must:

- Notify the program in writing of withdrawal.
  - Students who fail to officially withdraw from the program must make formal application for admission

### **Re-admission:**

With the approval of the Administrative Committee, a student who withdraws or is withdrawn from the program may be eligible for readmission for the following academic year, providing classroom, clinical and program capacity are available.

- The student must submit a written request for re-admission.
- The administrative committee will review the student's previous academic record.
- The program will respond to the request for readmission within 2 weeks of receipt of the request.
- Students who request readmission and are approved, must return within one year of withdrawal date.

**Re-admission conditions:**

- The program must be completed within 150% of the published program length.

**ATTENDANCE**  
**Call 346-426-1530**

Attendance has a profound effect on performance in both the classroom and the clinic. Students are expected to be in attendance, and on time, every day.

**School hours**

7:00 am – 3:00 pm

**Holidays**

Students receive scheduled time off each year. The exact dates are listed on the academic calendar.

Christmas Break	2 weeks
Spring Break	1 week
End of spring semester	2 weeks
End of summer semester	1 week

In addition to scheduled break, students are off on the holidays listed. The exact dates are listed on the academic calendar.

- Martin Luther King's Day
- President's Day
- Good Friday
- Memorial Day
- Independence Day
- Labor Day
- Day before Thanksgiving
- Thanksgiving Day
- Day after Thanksgiving

**Attendance Notifications:**

Students should notify the school at 346-426-1530 by 9:00 am on the day of the absence.

- Do not log in/out for your classmates.
  - Logging in/out for another student is considered fraudulent and will result in disciplinary action.
- Failure to log in and out on the same day may be coded as absent.
- Logging in or out must be done in the assigned area of the clinical rotation
  - If unable to log in or out on time, notify the clinical coordinator immediately

**Lates**

1. Students must be in class/clinic by the scheduled start time.
2. A student who will be late is encouraged to notify the school office by 7:00 am.
  - a. All late notifications must be completed before 9:00 am.
3. A student is coded late at:  
7:01 am to 8:00 am (some sites will have different arrival times - follow the 59 minute window accordingly).

### **Early Departure (Early Out)**

An early departure is any time a student clocks out or leaves up to 1 hour before the conclusion of a scheduled class/clinic time.

- An early departure will be coded as a late

### **Disciplinary action for Lates and Absences**

#### Lates

1<sup>st</sup> - 3<sup>rd</sup> infractions with notification

4<sup>th</sup> occurrence: counseling with suspension

- a. 12 hours of scheduled time to be made up at the end of the semester.
  - i. 4 hours for late/early departure
  - ii. 8 hours of suspension time

5<sup>th</sup> occurrence: - Administrative committee referral

- a. Extended Summer enrollment- post graduation with tuition
- b. Dismissal

### **Absences (With Permitted Time Off – PTO) (Excludes Summer semesters)**

Students may be absent a total of three (PTO) days each fall/spring semester. Scheduling PTO is encouraged and must be scheduled and/or taken before final exams start.

A student is absent when they:

- Call 346-426-1530 before 9:00 am on the morning of the absence.
- Arrive after 1 hour of scheduled class/clinic start time.
- Leave more than 1 hour before the conclusion of scheduled class/ clinic time.

### **PTO Notification process:**

1. Call 346-426-1530. The information must include the following:
  - a. Full name
  - b. Full date
2. Students are not permitted to schedule PTO on mandatory school days. The following are considered Non-PTO days (mandatory school days):
  - a. Workshops
  - b. TSRT
  - c. Graduation/ White Coat Ceremony
  - d. International Day
  - e. Semester Orientations
  - f. Inclement weather and/or make-up days
  - g. Final Exams
  - h. Before or after a scheduled day off
3. Students with more than three (3) absences or a missed Non-PTO day will be referred to the program director for disciplinary action.

### **PTO Absences**

- 1<sup>st</sup> - 3<sup>rd</sup> infractions with notification
- 4<sup>th</sup> occurrence: progressive counseling with suspension
  - a. 16 hours of scheduled time to be made up at the end of the semester.
    - i. 8 hours for absence
    - ii. 8 hours of suspension time
- 5<sup>th</sup> occurrence: - Administrative committee referral
  - a. Extended Summer enrollment- post graduation with tuition
  - b. Dismissal

### **Non-PTO Absences**

- 1<sup>st</sup> occurrence: progressive counseling with suspension
  - a. 16 hours of scheduled time to be made up at the end of the semester
    - i. 8 hours for Non-PTO absence
    - ii. 8 hours of suspension time
- 2<sup>nd</sup> occurrence: - Administrative committee referral
  - a. Extended Summer enrollment- post graduation with tuition
  - b. Dismissal

### **Absent without Notification (No call/no show)**

A student who does not notify the school office between 7-9am is coded as absent without notification.

- a. 1<sup>st</sup> occurrence: progressive counseling- verbal with 1 day Suspension  
16 hours of Scheduled time to be made up at the end of the semester
  - i. 8 hours for 4<sup>th</sup> absence
  - ii. 8 hours of suspension time
- b. 2<sup>nd</sup> occurrence: progressive counseling – written with administrative committee referral  
Suspension with probation
  - iii. Probation may not exceed 90 days.
  - iv. Suspensions may not exceed 3 days.
    - i. If 3 day suspension is not completed before program completion, student has not met the qualifications for graduation.
- c. Dismissal upon administrative committee decision

**\*Absent without notification for three consecutive days will result in immediate dismissal from the program.**

**Make-up time:** All make-up time must be made up before the conclusion of the semester. In extenuating circumstances, the administrative committee reserves the right to determine the schedule.

Summer I, II	Through the end of the semester
Fall I, II	Through the end of the semester
Spring I, II	Through the end of the semester

### **Illness**

#### Communicable Disease

A student with a communicable disease must:

- Inform the school immediately (before returning to class or clinic).
- Submit physician's clearance to attend school.
- Time missed must be made up by the end of the semester.
  - A student's enrollment may be extended to complete make-up time
- The program must be completed within 150% of the program length.

### **Inclement Weather/Make- up Time**

Sometimes inclement weather or other unforeseen circumstances prevent students from reaching school safely and on time.

During inclement weather:

- The Harris Health Emergency Notification has been received.
- Students will be notified when the school is closed or when there is a delayed start. "Delayed start"- when clinical departments delay opening.
- Students will not be penalized according to the regular attendance policy.

Students must complete inclement weather make-up time at the end of each semester during the scheduled school/ inclement weather days.

## **Injury**

A student who is injured while on the Harris Health System premises must:

- Report the injury immediately to the clinical supervisor and clinical instructor.
- Immediately complete and submit an E- incident report to Risk Management.
- Be evaluated by occupational health clinic or emergency department personnel.
- Be cleared to return to school without physical limitations.
- Make-up time will be determined on a case by case basis.

Note: The program must be completed within 150% of the program length.

## **Physical Limitations:**

A student who is injured/surgical procedure that interferes with clinical duties may resume didactic learning with physician clearance documentation. The student will not return to clinic with physical limitations preventing him/her to meet the technical performance standards. The student must:

- Submit clearance documentation before returning to clinic.
- Time missed must be made up by the end of the semester.
- When extenuating circumstances interfere with the student's progress, the student may request a leave of absence that may not exceed two weeks (10 school days).

## **Leave Of Absence (LOA)**

Leave of absence is not guaranteed. A student requesting a leave of absence must schedule a meeting with the administrative committee. The LOA will be decided on a case by case basis.

## **Jury Duty**

Jury duty is a civil responsibility. A student who is subpoenaed to jury duty may choose to be excused or to serve.

- Choose to be excused:
  - Submit documentation provided by the program.
- Choose to serve:
  - Submit the original court documents as soon as the notice is received.
  - Student will be excused from class/clinic for up to two weeks (with LOA).
  - If the trial lasts longer than two weeks, the student may be required to withdraw from the program and return the following year in the beginning of the semester in which they left.
  - Submit original court documents when jury duty is complete.

## **Court Appearances/Harris Health System**

A student who is subpoenaed to appear in court on Harris Health System business:

- Must submit the original court documents as soon as he/she receives notice.
- Will be excused from school.
- Must submit original court documents when court appearance is complete.
- Time missed will not be made up.

## **Court Appearances/Personal Business**

A student who is subpoenaed to appear in court on personal business:

- Must submit the original court documents as soon as he/she receives notice.
- Will be excused from school.
- Must submit original court documents when court appearance is complete.
- Time missed must be made up by the end of the semester.



## **Bereavement Leave**

A student is allowed 3 consecutive days for a death in the immediate family.

Harris Health System defines immediate family as:

- Mother, father, stepfather, and stepmother
- Sister, brother, spouse, mother-in-law, father-in-law, daughter-in-law, and son-in-law
- Daughter, son, stepchildren, and grandchildren
- Father-in-law, mother-in-law, daughter-in-law, and son-in-law
- Grandparents, great-grandparents and legal guardian

## **Bereavement Leave Procedure:**

- Submit a request for bereavement (funeral) leave
- Time missed for bereavement leave will not be required to be made up.

<https://apps.hchd.local/sites/dcc/Policy/Policies/6.25%20Bereavement%20Leave.pdf#search=bereavement>

## **DRESS CODE**

**Uniform:** Solid black scrubs (Permitted colors of scrub piping and logos).

- No fashionable zippers, snaps, buttons
- Infection prevention plan

**Shoes:** All black uniform shoes or sneakers with black or white socks.

**Lab Coat:** White or black, clean, and ironed lab coat.

**Covid-19 requirement:** Personal hand sanitizer and disposable surgical masks

The dress code is in effect at all times. Students must be in full uniform every day.

1. Hospital identification must be worn at all times.
2. Both male and female students may wear standard white or black t-shirts with rounded collar. T-shirts must be clean and free of logos. Black or white fitted long-sleeves are permitted under scrub top.
3. Shoes must be clean.
4. Jewelry must be kept to a minimum.
5. Hair must be kept clean.
  - a. Shoulder length or longer hair must be pulled back so as not to fall forward during patient care.
  - b. Hair must not cover the name badge.
  - c. Hair ornaments kept to a minimum.
  - d. Facial hair must be neatly trimmed and well groomed.
6. Nails must be kept short and clean.
  - a. Nails should not extend ¼" past the fingertips.
  - b. No artificial fingernails or extenders.
  - c. Nail polish must be un-chipped and clear.
7. A black or white lab coat is the only acceptable outerwear in clinic.
8. Outer wear is permitted and may be worn in class. Hoods, hats, and beanie's are not permitted in class.
9. Students on surgery rotation must wear appropriate surgical attire. Students must wear masks in all operating rooms.

BT surgical attire:

  - a. OR scrubs (retrieved from scrub kiosk)
  - b. Hair cover
  - c. Shoe covers

LBJ surgical attire:

- a. OR scrubs (request from supervising technologist)
- b. Hair cover
- c. Shoe Covers

10. Students leaving the surgery department (lunch, break, or end of clinical day) must remove all surgical attire.

- LBJ Students must wear a lab coat to cover scrubs (exposed to surgery) when leaving the surgical department and entering other areas of the hospital.

<https://sp2013.hchd.local/cmo/quality/Pages/Infection-Prevention.aspx>

### Identification Badge

ID badges are utilized by Harris Health System for identification as well as for access to all facilities.

The student must:

- Wear the ID badge at the collar while on Harris Health System premises.
- Return defective and defaced badge to the Department of Public Safety for replacement.
- Not lend the badge to anyone to access Harris Health System premises.
- Not borrow anyone's badge to access Harris Health System premises.
- Not deface the ID badge with stickers.
- Replace a lost badge.
  - Complete the request for replacement.
  - Have the request signed by the Program Director.
  - Take the request to Harris Health System Department of Public Safety.
  - Pay the fee to replace the ID badge.

### Professional Conduct

The ServiceFIRST Interaction Standards are the foundation for professional conduct of Harris Health System.

The success of the program relies upon students and staff working effectively together to deliver high quality healthcare to residents of Harris County. Professional conduct is required and expected at all times.

Students must:

- Be courteous.
- Demonstrate professionalism.
- Follow directives.
- Maintain patient confidentiality.
  - Do not disclose patient information to anyone who is not directly involved with the care of the patient: this includes friends, classmates and family members.
- Discourage visitors in the imaging department during school hours.

### SERVICEFIRST INTERACTION STANDARDS

To ensure that I deliver an Exceptional Harris Health Experience with every interaction with patients, guests, and co-workers, I commit to exhibiting these specific behaviors:

#### **FRIENDLINESS: Friendly, helpful greeting**

*"Welcome to Harris Health, my name is..., how may I help you?"*

*"Good morning, my name is Jane Smith; I look forward to taking care of you." "Thank you for calling Harris Health, this is...how can I help you?"*

#### **INTEGRITY: "I" statements to show ownership**

*"I can help you with ..."*

*"I will get someone who can help you with..."*

*“Is there anything I can do for you?”*

**RESPONSIBILITY: Responsible for time expectations and next steps**

Reset time expectations

Keep patients and coworkers informed

Describe and communicate next steps

**SATISFACTION: Surroundings and personal appearance**

Personal appearance: name badge on the upper part of your body, no lanyard Adhere to dress code standards

Keep work areas/public areas clean and clutter free

**TEAMWORK: Thank You**

*“Thank you for choosing Harris Health.”*

*“Thank you for letting us take care of you.”*

*“Thank you and have a healthy day.”*

**SAFETY**

**Radiation protection policy**

Upon admission, students receive instruction in basic radiation protection. Students also receive dosimeters. These instructions are given before the students begin assignments in clinical rotations, and before the students begin performing experiments and radiographic procedures using ionizing radiation. Radiation protection practices are designed to reduce radiation exposure to self, to the patient, to other personnel and to the public. Students must not hold image receptors during any radiographic procedure, and student should not hold patients during any radiographic procedure when an immobilization method is the appropriate standard of care. Failure to adhere to the radiation protection policy will result in disciplinary action.

Students are instructed on:

- The importance of radiation protection
- Radiation measurement
- Personal monitoring device (dosimeter)
- Monitoring records
- Protective measures for the student, patient, staff and visitors
- Radiation protection practices “dos and don’ts”.

Students are required to:

1. Adhere to the radiation protection practices.
2. Wear radiation monitor as instructed.
3. Wear protective apparel as instructed.
4. Utilize the principles of time, distance, and shielding in radiation protection.
5. Leave radiation monitor in a safe area at the end of each day, unless otherwise instructed.
6. Perform experiments with energized equipment under supervision of clinical staff or clinical instructors only.
  - a. Use phantoms and positioning devices that are available for performing laboratory experiments.

***Students are prohibited from performing radiographic procedures on each other using ionizing radiation.***

### **Radiation monitoring guidelines**

The student must:

1. Wear the radiation monitor on the uniform collar at all times while in clinic.
2. Wear the radiation monitor outside of the lead apron on the collar during fluoroscopy.
3. Leave radiation monitor in a safe area at the end of each day, unless otherwise instructed.
4. Exchange the radiation monitor at the beginning of each quarter.
5. Review and initial the dosimetry report in the office.
6. Handle the radiation monitor with care.
7. Be careful not to misrepresent the actual exposure; severe disciplinary action will result including suspension and/or dismissal from the program.
8. Report lost or altered radiation monitors.
9. Pay a \$20.00 replacement fee for lost radiation monitors.
10. Submit the radiation monitor(s) on the last day of training for a final reading. A composite radiation record will be placed on file in the radiation safety office.
11. Request, in writing, to radiation safety officer (RSO) to have exposure records made available to employers.
12. Failure to adhere to the guidelines for radiation monitoring will result in disciplinary action.

In the event that a student receives an excessive amount of radiation during a reporting period, the RSO and the program director will meet with the student and conduct an incident investigation.

Recommendations from the RSO will be followed in accordance with the Harris Health System Radiation Safety Policy.

#### THE ALARA LEVELS FOR OCCUPATIONALLY EXPOSED PERSONNEL ARE:

- Level 1: 125-400 mrem.
- Level 2: greater than 400 mrem.
- For ALARA Level I notifications, the Radiation Safety staff will review the dose with the badged individual and report results to the Radiation Safety Committee. No action is required unless deemed appropriate.
- For ALARA Level II notifications, the Radiation Safety staff will investigate in a timely manner the cause(s) the dose with the badged individual and, if warranted, take action. A report of the investigation and the individual's exposure record will be presented to the Radiation Safety Committee following completion of the investigation. The details of these reports will be recorded in the Committee minutes.

<https://radsafety.wustl.edu/documents/manual/11-ALARAProgram.pdf>

Pregnant students will be governed by the pregnancy policy.

### **Dosimeter Replacement:**

To request or replace a dosimeter, contact program administration

- Faye Vance is the contact person in the radiography program to order or cancel dosimeters.
- There is a \$20.00 replacement fee for lost dosimeters.

### **Radiation monitoring records**

1. The dosimetry reports are reviewed by the Radiation Safety Officer (RSO) and the program director.
2. Any problems identified on the report are addressed by both the RSO and the program director.

3. Records for one full year of monitoring are maintained in the program office in the radiation monitoring binder.
4. Students and faculty can review their personal dosimetry report upon request.
5. The radiation monitoring records for the program are primarily maintained by the RSO
6. Request for records will be directed to:

Dr. Benjamin Archer  
Radiation Safety Officer  
Baylor College of Medicine  
1 Baylor Plaza  
Houston, Texas 77030

## **Pregnancy Policy**

The pregnancy policy adheres closely to the Basic Radiation Protection Criteria recommended by the National Council on Radiation Protection and Measurements and the Texas Regulations for Radiation Control, Item 21.208(a).

In order for a pregnant female student to take advantage of the lower exposure limit and dose monitoring provisions specified in 10CFR Part 20, the female student must declare her pregnancy in writing. The National Council on Radiation Protection and Measurements (NCRP) recommends a monthly equivalent dose limit of 5 mSv to the embryo/fetus once the pregnancy is known.

<http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/part020-1208.html>

This policy allows a pregnant female student participating in the Harris Health System School of Diagnostic Medical Imaging to:

- Decide whether she wants to formally declare her pregnancy to take advantage of lower dose limits for the embryo/fetus of pregnant women.
- Must declare her pregnancy in writing.

A declared pregnant female student is defined as a female student who voluntarily declares her pregnancy and the estimated date of conception.

### **When a female student declares her pregnancy:**

1. The program will initiate additional monitoring (embryo/fetus).
2. All didactic and clinical assignments will remain the same.
3. All policies and procedures that affect attendance will remain the same.
4. If the student requires any variations from the approved policies and procedures the student, her physician, the Program Director, and the Radiation Safety Officer will provide input into the decision making process.
5. The student may choose to:
  - a. Continue in the program.
  - b. Take a leave of absence and return when the baby is born.

### If a declaration of pregnancy were withdrawn:

- a. Withdrawal must be written and submitted to the Radiation Safety Officer.
- b. The dose limit for the embryo/fetus would apply only to the time from the estimated date of conception until the declaration is withdrawn.

### If the declaration is not withdrawn:

- a. The written declaration may be considered expired one year after submission.

The lower the dose limit for the embryo/fetus should remain in effect until female student withdraws the declaration in writing or the female student is no longer pregnant.

## References:

USNCR, "Dose equivalent to an embryo/fetus," Title 10, Code of Federal Regulations. Revision, August 2018. <http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/part020-1208.html>

## **Magnetic Resonance Imaging (MRI) Safety Screening**

The Harris Health System School of Diagnostic Medical Imaging adheres to the safety policy of MRI safety and screenings. All students are screened for contraindications at the beginning and mid program. The screenings are evaluated and MRI compatibility is determined. The reference used for determining MR compatibility is Sherlock's Pocket Guide to MR Procedures and Metallic Objects

<https://www.ajronline.org/doi/full/10.2214/ajr.176.2.1760412>. An online reference is [www.mrisafety.com](http://www.mrisafety.com).

The following devices are absolutely contraindicated for MR imaging because they are magnetically, electrically, mechanically activated or affected:

- Implantable Pediatric Sternum Device
- Metallic Foreign Body in the Eye
- "Triggerfish" Contact Lens
- Gastric Reflux Device
- Insulin Pumps
- Temporary Transvenous Pacing Leads

## **Safety and Environmental Health**

<https://Sp2013.Hchd.Local/Hse/Safety-Env/Pages/Default.aspx>

## **OSHA Standards**

Occupational Safety and Health Administration standards are presented to the incoming students at Harris Health System orientation and again at mandatory annual in-services.

## **Code Red (Fire Safety)**

Code Red regulations are presented to the incoming students at Harris Health System orientation and again at mandatory annual in-services.

Students are expected to know and abide by the fire and safety regulations.

## **Material Safety Data Sheet (MSDS)**

MSDS Sheets contain pertinent information regarding all chemicals used within the hospital. Safety regulations are presented to the incoming students at Harris Health System orientation and again at mandatory annual in-services.

- MSDS Sheets must be accessible, on site in area for any chemicals/cleaning/disinfecting solutions that are used in the area.

## **Infection Prevention**

The Infection Prevention Department (IPD) shall be responsible for establishing and maintaining infection control measures for the control and prevention of infections across the organization and to identify and control outbreaks.

- Reduce the risk of healthcare associated infections for all patients, employees, and visitors.

<https://msdsmanagement.msdonline.com/6e6f4ee0-4697-49a6-a7a0-8f9e44059469/ebinder/?nas=True>

## **Harris Health System Department of Public Safety**

Harris Health System maintains a security program to protect patients, personnel, students, and visitors against injury or loss. Harris Health System reserves the right to inspect packages, lockers, and any other

areas as needed. Harris Health System also reserves the right to request proper identification. Any personal, hospital or patient items that are missing should be reported immediately.

### **Criminal Offense**

Students who are charged with a criminal incident (except standard traffic offenses) must report the incident to school administrators within five days after he/she is charged or arrested. Failure to do so may result in dismissal from the program.

### **DISCIPLINARY ACTION**

Harris Health System Employee Discipline Policy and Regulation

<https://apps.hchd.local/sites/dcc/Policy/Policies/6.20%20Employee%20Discipline.pdf>

#### **Definitions:**

- **Occurrence:** A metric or measurement that is used to guide the disciplinary action.
- **Progressive Counseling:** A discussion between administrator and student regarding performance.
- **Late:** Reporting to 7:01 - 8 am. (Some sites will have different arrival times- follow the 59 minute window accordingly)
- **Early departure:** Reporting early leave: 1 hour before the conclusion of scheduled class/ clinic time.
- **Absence:** Missing 7 or more hours of a scheduled day. Arriving after 1 hour of scheduled class/clinic start time or leaves more than one hour before end of the scheduled day.
- **Missed Punch:** Failure to clock in at the start or end of the scheduled day or in the wrong area.
- **Wrong Location punch:** Clocking in/out of an unassigned area.
- **Permissible Incidents:** 1-3 infractions with notification, disciplinary action at the fourth infraction.
- **Impermissible Incidents:** Disciplinary action at first infraction.
- **School Days (non-PTO):** Students are obligated to the program according to the academic calendar

<b>Disciplinary Guide Lines</b>	
<b>Permissible Incidents</b>	<b>Impermissible Incidents</b>
Excessive absenteeism	Misconduct
Failure to follow instructions	Unsatisfactory academic performance
Dress code violation	Violation of safety rules
Missed punch	Academic Dishonesty
Wrong location punch	Violation of school, department or hospital policies
Excessive Late infractions	Unsatisfactory clinical performance

Students are subject to disciplinary action when they engage in conduct that violates program, departmental, and Harris Health System policy. The program reserves the right to make disciplinary decisions to ensure the highest level of education and patient care.



**Permissible Incidents (Grace period):**

1<sup>st</sup> - 3<sup>rd</sup> infractions with notification

4<sup>th</sup> occurrence: progressive counseling with suspension

- b. 16 hours of scheduled time to be made up at the end of the semester.
  - iii. 8 hours for absence
  - iv. 8 hours of suspension time

5<sup>th</sup> occurrence: - Administrative committee referral

- a. Suspension with probation
  - i. Probation may not exceed 90 days.
  - ii. Suspension time may not exceed 3 days.

6<sup>th</sup> occurrence: Administrative committee decision

- a. Extended Summer enrollment- post graduation with tuition
- b. Dismissal

\*The student may initiate grievance procedure.

**Impermissible Incidents (No grace period):**

1<sup>st</sup> occurrence: progressive counseling with suspension

- a. 16 hours of scheduled time to be made up at the end of the semester
  - iii. 8 hours for Non-PTO absence
  - iv. 8 hours of suspension time

2<sup>nd</sup> occurrence: Administrative committee referral

- b. Suspension with probation
  - v. Probation may not exceed 90 days.
  - vi. Suspension time may not exceed 3 days.

3<sup>rd</sup> occurrence: Administrative committee decision

- a. Extended Summer enrollment- post graduation with tuition
- b. Dismissal

\*The student may initiate grievance procedure.

**Immediate Dismissal**

Students are subject to disciplinary action when they engage in conduct that violates program/department/hospital policy.

A student may be subject to immediate dismissal after a thorough investigation for any of the following infractions: **This list is not all-inclusive.**

1. Rudeness – offensive in the manner or action, discourteous, coarse, vulgar, ignorance or indifference to good form.
2. Insubordination- not submitting to or being disobedient to authority (any program official, hospital official, sonographer, or administrator).
3. Unprofessional behavior- ServiceFIRST violations.
4. Fighting (physical violence).
5. Possession of alcohol, drugs, and/or weapons.
6. Intoxication – drinking intoxicating beverages or possession of illegal drugs while on Harris Health System premises, or arriving under the influence of intoxicating beverages or drugs.
7. Falsification of records such as:
  - admission application

- attendance record
  - examination record
8. Theft.
  9. Unethical conduct.
  10. Failure to report to school for three consecutive days without notification.
  11. Willful negligence or refusal to perform according to the policies and procedures of the program/department/hospital.
  12. Judicial convictions for offenses that jeopardize the student's status in Harris Health System.
  13. Releasing confidential medical information (written or verbal) without authorization.
  14. Failure to maintain satisfactory academic and/or clinical progress after counseling
  15. Giving oral or written opinions or diagnoses of a procedure to a patient.
  16. Submitting examinations to PACS without technologist approval.

### **Due Process or Grievance Procedure**

The grievance procedure is designed to assure fairness to students involving disciplinary action; student reports, dismissals, unfair treatment, unsafe or unhealthy conditions and discrimination.

The grievance procedure should be invoked *only after* attempts to resolve the problem at the school's administrative level have failed.

#### **Step 1:**

- a. No later than 5 days after the occurrence that gave rise to the conflict; the student will present a signed written request to the Administrative Director of Education.
- b. The Director shall meet with the student and provide a written response to the student within 5 days of the meeting.

#### **Step 2:**

- a. In the event that the conflict was not satisfactorily resolved, the student may, within 5 days of the response, submit written request for resolution to the Senior Vice President of Human Resources.
- b. The student and the administrator shall convene a meeting within 5 days of receipt of the request.
- c. The Senior VP shall submit a written response to the student's request within 5 days following the meeting.
- d. The decision of the Senior VP of Human Resources is final.

### **Availability of Standards/Complaint Resolution**

The *Standards for an Accredited Educational Program* is a document containing the essential elements of a radiography program and was adopted by The Joint Review Committee on Education in Radiologic Technology:

- The program educates all students of the 'Standards' by discussing them during program orientation, as well as introductory courses.
- Every effort is made to conduct the business of the school in the manner prescribed and to maintain compliance with the 'Standards'.
- In the event that noncompliance with 'Standards' are identified, a plan of corrective action for the area of noncompliance and recommendations for improvement will be submitted to the program's administrative committee for approval. Upon approval, the corrective action will be implemented and evaluated for effectiveness.
- Unresolved complaints with the standards may be reported to the:

## Radiography

Joint Review Committee on Education in Radiologic Technology (JRCERT)

20 N. Wacker Drive, Suite 2850

Chicago IL. 60606-3182

(312) 704-5300 [www.jrcert.org](http://www.jrcert.org)

[http://www.jrcert.org/sites/jrcert/uploads/documents/Standards\\_2014-Radiography.pdf](http://www.jrcert.org/sites/jrcert/uploads/documents/Standards_2014-Radiography.pdf)

## Sonography

Joint Review Committee-Diagnostic Medical Sonography

6021 University Blvd. Suite 500

Ellicott City, MD 21043

(443) 973.3251 [www.jrcdms.org](http://www.jrcdms.org)

<http://www.jrcdms.org/pdf/Standards2011.pdf>

## Harris Health Policies

### Telephone/Cell Phone Usage

Use of cell phones or other devices to take pictures, to record conversations or video-record within the clinical area is strictly prohibited.

- The use of cell phones is prohibited in the patient care areas.
- Emergency calls should be directed to the school office at 346-426-1530.
- Harris Health System telephones, fax machines, and copiers should be used for Harris Health System business only.
- The use of cell phones in the classroom is limited and controlled by faculty.

<https://apps.hchd.local/sites/dcc/Policy/Departmental/Department%20of%20Public%20Services%20%20Security/9103%20Professional%20Conduct%20Telephone%20Etiquette.pdf>

### Smoking

Use of tobacco products in the Harris Health System facilities is prohibited.

- For the safety of all students, employees, and patients, all facilities of Harris Health System are smoke free.

### Sleeping

Sleeping is prohibited during school hours.

- A violation of this policy is grounds for immediate dismissal.

### Solicitation and Distributions

*Solicitation or distribution within the Harris Health System facilities is prohibited*

## STUDENT SERVICES

**TUTORING** in all coursework offered in the curriculum.

**Admissions** serve as the first point of contact in the recruitment process, from answering student and family admissions questions, coordinating student selection process.

**Student Leadership Council** provides a collective voice for the students, and provides leadership opportunities for class officers in student government.

**Career Development** includes career education in advanced certification and higher education, career counseling, resume review.

**Wellness Education** provides information on personal wellness including smoking cessation classes, exercise, weight loss and nutrition. The Employee Clinic makes vaccinations and TB screening available to all students at no cost to the student.

### **Americans with Disabilities Compliance**

Students who have a documented learning, psychological or physical disability may be entitled to reasonable academic accommodations or services. To request accommodations or services, contact admissions. All students are expected to fulfill essential course requirements. All requests are referred to Human Resources for consideration. The program will not waive essential skill or requirements of a course. Students requesting ADA requests for accommodations are referred to Harris Health Human Resources

### **Employment**

Enrollment in the programs requires full-time dedication. Full-time employment during enrollment is discouraged.

- Course assignments must take priority over employment.
- Students who must work should try to secure jobs with flexible hours.
- The program does not accommodate part-time enrollment.
- Students do not receive a stipend.

### **Personal Counseling for Spiritual Care.**

Chaplains in the department of Spiritual Care are available to provide spiritual care. This includes employees, students, patients, patient's family and visitors.

### **Parking**

Students are encouraged to explore all options that are available to them for transportation and parking in the medical center. Students are responsible for their own parking. However, parking is available at no cost at the majority of the clinical sites:

- 4900 Fournace
- Ambulatory Care Center (ACS) - use employee parking area.
- Smith Clinic - Students are responsible for the cost of parking.
- LBJ - Parking lot D, with parking decal displayed.
- BT- Students are responsible for the cost of parking. Contract parking is available through the Texas Medical Center Parking Garage.

Students may contact Texas Medical Center Parking at (713) 791-6161, or online at <https://www.tmc.edu/parking/contract-parking/>

### **Health & Healthcare Services**

Guidelines for student healthcare:

1. Students should be in good mental and physical health.
2. Students are responsible for their own personal healthcare. Students may access health care services within Harris Health System. However, students will be billed for services received according to "ability to pay" as determined by Harris Health System eligibility.
3. Occupational Health Clinic establishes and maintains a health record for all incoming students.

4. All healthcare procedures for incoming students are performed by the Harris Health System Occupational Health Clinic at no cost to the student.
5. The student must be cleared fully by Occupational Health Clinic before beginning the program.
6. Because of the high incidence of pulmonary tuberculosis in the patient population served by Harris Health System, ongoing TB skin test or chest x-ray are required.
  - Hospital policy mandates that all employees and students must adhere to the Harris Health System policy governing TB screening and testing.
  - This policy is managed by Harris Health System and mandates suspension if it is violated.
7. The hepatitis vaccine is available to all students. The vaccine may be obtained through the Occupational Health Clinic at no cost to the student.
8. Students who are injured while on Harris Health System premises should report the injury immediately to the clinical supervisor and clinical instructor.
  - a. An injury report and an e-incident report must be completed and submitted immediately to Risk Management.
  - b. The student will be evaluated by Occupational Health Clinic or emergency department personnel.
9. To return to class and clinic, students must be cleared by their physician following an absence due to:
  - Injury
  - Illness
  - Surgery
  - Communicable disease

### **RECORD KEEPING AND AVAILABILITY OF RECORDS**

Official student records are maintained in the school office. The student must inform the school of any changes.

The following records are maintained:

#### Current students

- Application to the school
- Transcripts
- Academic documentation
- Signed student agreement
- Harris Health System Admission records
- Attendance records
- Student evaluation records, including didactic and clinical areas
- Documentation of counseling and disciplinary action
- Didactic education record
- Clinical education record

#### Graduates

- Harris Health System Transcript (permanent)
- Application form (permanent)
- Class schedules, attendance report summary, and clinical assignments are kept for 3 years

#### Applicants who were denied admissions

- Records are kept for a maximum of 1 year
- Summary of reason

## Withdrawals

- Records of students who withdrew in any Semester –same as graduate

## Records Release

- Transcripts of all graduates of the Harris Health System are stored electronically.
- The student's record may be transferred only by written request.

## Confidentiality of Student Records

The program has an obligation to protect the student's right to privacy regarding their personal and academic information. Student records are maintained in accordance with the Family Education Rights and Privacy Act.

The program must have written permission from the student in order to release any information from their education record. However, FERPA allows schools to disclose those records, without consent, to the following parties or under the following conditions (34 CFR § 99.31):

<https://www2.ed.gov/policy/gen/guid/fpco/pdf/ferparegs.pdf>

- Program officials with legitimate educational interest
- JRC-DMS/CAAHEP/JRCERT officials
- ARDMS/ARRT officials
- Appropriate parties in connection with financial aid to a student
- Organizations conducting studies for, or on behalf of, the program
- To comply with a judicial order or lawfully issued subpoena
- Appropriate officials in cases of health and safety emergencies
- State and local authorities pursuant to specific state law

The program considers name, address, telephone, date of birth, degree earned and dates, major field of study, dates of attendance, and number of hours completed and in progress, enrollment status, student classification, and name of most recent institution attended as directory information. This is the information that can be given out to anyone making a request, provided the student has not requested confidentiality hold.

1. The program will regard each student record as a unique and private document and maintain it in a secure, controlled environment.
2. Student records are secured in a locked cabinet in the program's administrative office and are available for review on request by the student.
3. In compliance with the "Federal Family Education Rights and Privacy Act of 1974" (Buckley Amendment), enrolled students may review personal records upon request.
  - The record review will be under the supervision of a program official
4. The program director and clinical instructors' offices and records are accessible to program administration and staff only.
5. Release of student information will be by written request of the student.
6. Enrolled students must submit all requests for information on "Request for Student Record" form available in the program office.
7. The office will respond to requests within 24 hours.
8. Graded papers will be returned to each student personally and not left in a public area.

<http://www2.ed.gov/policy/gen/guid/fpco/pdf/ferparegs.pdf>

## Schedules

Academic and clinical assignments are sent to all students via email at the beginning of each semester.

## Clinical Assignments

- Clinical assignments change each semester and new schedules are posted accordingly.
- Students must check the schedule for new assignments.
- Faculty must be contacted for approval of any changes to the clinical schedule.
- Students may be reassigned by Faculty or Department leaders if necessary.
- All students rotate through all mandatory clinical assignments.

## Professional Liability Insurance HHS documentation needed

The program maintains professional liability insurance for all students.

- Students are covered only when they are functioning in the capacity of a student in Harris Health System.
- The policy may be located in the School office.

Student Malpractice Blanket Liability  
The limits of coverage are: **1,000,000.00 / 3,000,000.00**  
Policy covers: **Students and Faculty**

## Learning Resources

Learning resources listed below are available for student use.

Resource	Availability	How to Access
Computers	Unlimited	Student ID
Resources (books and software)	During school hours Overnight loan Check out	Request from school office
Classroom	When not in scheduled use	Student ID
Sonography Scan lab	When not in scheduled use	Student ID
**Imaging Equipment	When not in use	Faculty approval
Skeleton, disarticulated bones, injectable training arm, positioning and imaging phantoms, physics and other teaching aids	During school hours	No reservation necessary
	Before and after school	Reservation required

\*\* With the exception of this resource, all resources are maintained in the school or classroom.

## Trajecsys Reporting System

Harris Health System School of Diagnostic Medical Imaging has implemented the use of Trajecsys web-based reporting system for the following items:

- Time/Location Monitoring
- Activity Logs

- Checkoffs/Competencies
- Evaluations
- Forms
- Student Scheduling
- Reports

Registration into Trajecsys can be accessed at <https://www.trajecsys.com/programs/registration.aspx>

### **Breaks**

On clinic days, students may take one 15-minute break in the morning and one 15-minute break in the afternoon. Students may not take a break until they have been in clinic for at least two hours.

- Breaks can be taken when workload permits, with permission from the charge technologist of the area.

### **LUNCH**

Students are allowed a minimum of 30 minutes for lunch.

- Lunch period begins and ends at the time indicated on the lunch schedule by the supervisor.
- Lunch should be scheduled and taken by 1:00 PM.
- Students are encouraged to eat in the designated eating areas.
- Students should not eat in the classroom at Fournace or computer work stations.



## CLINICAL EDUCATION

### Purpose:

The diagnostic medical imaging program at Harris Health System is designed to educate the next generation of competent and compassionate entry-level imaging professionals. To accomplish this purpose, the instruction is concentrated in two areas: didactic and clinical education. The two avenues of instruction are designed to achieve objectives in the cognitive, psychomotor and affective domains.

The Competency Based Clinical Education (CBCE) plan begins during the first semester as Clinical Education I and continues through the last semester. The students are presented with specific objectives and competencies that must be accomplished. The CBCE plan consists of three stages of development: instruction, practice, and evaluation.

The focus of clinical education is to develop **P.R.I.D.E**:

**P**roficiency

**R**esponsibility

**I**ndependence

**D**edication

**E**xcellence

The clinical education policies and procedures are designed to provide clear concise instructions to the student regarding clinical education expectations: when, under what conditions, and how well he/she is expected to perform in order to demonstrate clinical competency and proficiency.

In clinical education, the student will:

### **Develop Proficiency**

Proficiency is the skill with which a student accomplishes assigned tasks in the clinical setting. True proficiency is more than competence but less than perfection. Proficiency comes from doing as many examinations as possible and aiming to improve the level of performance after each examination completed.

### **Assume Responsibility**

All students are working towards developing the skills necessary to assume the responsibilities of an entry-level technologist. To achieve this goal, the student must be open to constructive criticism from all members of the healthcare team with whom they interact.

### **Develop Independence**

All students begin clinical education by performing medical imaging procedures under the direct supervision of a qualified technologist. As the student progresses in the program, the student is expected to do fewer procedures under direct supervision and more under indirect supervision.

Examinations performed in critical care areas must always be performed under the direct supervision of a qualified technologist.

### **Develop Dedication**

The student learns that the reason for the existence of the healthcare facility and its staff is to meet the needs of the patient. The student is dedicated to practicing good patient care skills by being compassionate and competent.

### **Develop Excellence**

Excellence is a combination of performing at your best and adhering to the policies and procedures of the imaging program, the radiology department and the hospital. This is the level of performance that every student is expected to continually strive for and eventually reach in clinical education.

## **CURRICULUM**

Students spend a minimum of sixteen (16) hours per week in clinical education during the first year (summer I exception) and twenty-four (24) hours per week during the second year.

Clinical Education includes:

- Positioning skills
- Patient care skills
- Communication
- Teamwork
- Attendance
- Dress code
- Professionalism

Affective domain objectives:

- Critical thinking
- Problem solving
- Adjustment to the clinical environment
- Safety in the workplace
- Radiation protection

Students are expected to demonstrate professionalism:

- Provide the standard of care that Harris Health System and the medical imaging profession expect and demand.
- Adhere to ServiceFIRST Interaction Standards
- Present a polished personal appearance daily
- Arrive prepared with the 'tools of your trade':
  - ✓ procedures pocket guide (optional)
  - ✓ notebook
  - ✓ pen
  - ✓ anatomic markers (Radiography)
  - ✓ radiation monitor (dosimeter)
- Report to clinical rotations at scheduled times.
- Report to assigned technologist at the beginning of each rotation.
- Stay in the rotation assigned. (Note: The student must obtain permission to leave the clinical area).

- Be a team player.
- Maintain a clean work area.
- Check to see if anyone needs help in caring for a patient before you leave the area or sit down.
- Catch up on your reading only when there are no patients waiting or in the work area. Backpacks along with text-books are prohibited in all clinical work areas.
- Always give of your best.
- No personal items allowed in patient care areas

### CLINICAL SITES

Clinical Site	Sonography	Radiology
<b>Ben Taub General Hospital (BT)</b> <b>1504 Taub Loop</b> <b>Houston, TX 77030</b> School Office 713 873-2248	Main 713-873-2423 MFM 713-873-4530	Main 713-873-2406
<b>Lyndon B. Johnson General Hospital (LBJ)</b> 5656 Kelley St. Houston, TX 77026 School Office 713 566-9043	Main 713-566-5459 MFM 713-566-5935 Echo 713-566-5927	Main 713-566-5438
<b>Smith Clinic</b> 2525-A Holly Hall Houston, TX 77054 713-566-3600	Main 713-566-5121 Breast 713-566-3475	Main 713-566-5121
<b>Martin Luther King Jr. Health Center</b> 3550 Swingle Road Houston, TX 77047 713-547-1000		Main 713-547-1180
<b>Vallbona Health Center</b> 6630 DeMoss Street Houston, TX 77074-5004 713-272-2600		Main 713-272-2611
<b>Casa de Amigos Health Center</b> 1615 North Main Street Houston, TX 77009-8525 713-222-2272		Main 713-236-7140
<b>Aldine</b> 4755 Aldine Mail Route Houston, TX 77039-5934 281-985-7600		Main 281-985-7577
<b>El Franco Lee</b> 8901 Boone Road Houston, Texas 77099 281-454-0500		Main 281-454-0983

Clinical supervisors and instructors will discuss student responsibilities with the students during clinical education at the beginning of the first clinical rotation.

## **Student Supervision**

Student supervision during clinical education is a responsibility shared by the clinical instructors and the supervising technologists.

Students will observe and perform procedures under the supervision of a qualified technologist or radiologist.

The parameters of supervision are:

### **Direct Supervision**

Until a student achieves and documents competency in any given procedure, clinical assignments shall be carried out under the direct supervision of a qualified technologist.

A qualified technologist:

1. Reviews the request for examination in relation to the student's level of achievement.
2. Evaluates the condition of the patient in relation to the student's knowledge.
3. Is present during the examination.
4. Critiques and approves the images.

*Radiography Students: Students must perform venipuncture, mobile procedures, operative procedures, ER shock room procedures and procedures in advanced imaging modalities with direct supervision.*

### **Indirect Supervision**

After demonstrating competency in an examination, the student may perform the examination with indirect supervision.

A qualified technologist:

1. Is immediately available to assist students regardless of the student's level of achievement.
  - Immediately available is interpreted as the presence of a qualified technologist in the area or location where the diagnostic procedure is being performed.
2. Reviews the request for examination in relation to the student's level of achievement.
3. Evaluates the condition of the patient in relation to the student's knowledge and level of achievement.
4. Critiques and approves the images.

### **Repeat Medical Images**

In support of our professional responsibility to provide quality patient care and competency, unsatisfactory images will be repeated with direct supervision, regardless of the student's level of competency.

To repeat a medical image a qualified imaging technologist:

1. Determines how to correct the image.
2. Is present during the repeat examination.
3. Critiques and approves the repeat image.

**VIOLATION OF THIS POLICY WILL RESULT IN DISCIPLINARY ACTION.**

## **CLINICAL EDUCATION EVALUATION**

The program utilizes several methods to evaluate student performance in clinical education to ensure clinical competence.

1. Clinical Performance Evaluations
  - a. Biweekly evaluation
  - b. End semester evaluations
2. Competency Evaluations
3. Clinical Capstone
4. Terminal Competency evaluation

### **Biweekly Evaluations on Student Performance**

The program utilizes biweekly evaluations to assess student performance in clinical education.

### **Biweekly Evaluations on Clinical Experience**

The program utilizes biweekly student report to document their clinical experiences. The student completes the evaluation at the end of each two-week clinical rotation. The biweekly reports are factored into the clinical education grade.

### **End of Semester Evaluations**

The faculty conducts progress reports at ends of the semester, to evaluate and monitor the students' progress. A student may request clinical performance updates; the clinical coordinator will schedule to meet with student.

### **Conflict Resolution**

Should a conflict arise in clinical education:

1. The student should first address the situation to the supervising technologist or Designated Clinical Instructor (DCI).
2. If the problem is not resolved, the supervising technologist or DCI should notify the school office.
3. Should the resolution not meet the satisfaction of the parties involved, the complaint will then be taken directly to the program director for resolution.
4. The program director must be appraised of all complaints and resolutions that occur.

## CLINICAL EDUCATION PERFORMANCE EVALUATIONS BY INSTRUCTORS

**4=100, 3=90, 2=80, 1=70**

Criteria/Guidelines	Evaluation Score
<b>Punctuality</b>	
1-3 incidents (Permitted)	4
4th incident	3
5th incident	2
More than 5 incidents	1
<b>Availability (attendance)</b>	
1-3 incidents (Permitted Time Off)	4
4th incident	3
5th incident	2
More than 5 incidents	1
<b>Dress code</b>	
Correct uniform worn correctly & starched and ironed	4
Correct uniform worn correctly	3
Correct uniform worn correctly and wrinkled	2
<b>Grooming</b>	
Hair pulled back, nails trimmed, minimal jewelry	4
One missing (hair, nails, jewelry)	3
Two missing (hair, nails, jewelry)	2
<b>Cleanliness</b>	
Clean uniform, clean body, shoes polished	4
One missing (uniform, body, shoes)	3
Two missing (uniform, body, shoes)	2

## **Clinical Competency**

Students must demonstrate competency in the imaging procedures required by the program. Demonstration of clinical competency means that faculty or a technologist has observed the student perform the procedure, independently, consistently, and effectively.

The student must demonstrate competence in:

- Requisition evaluation
- Patient assessment
- Room preparation
- Patient management
- Equipment operation
- Exposure factor selection
- Positioning
- ALARA
- Image processing and evaluation

## **Steps to achieving competency**

Following successful completion of classroom instruction and lab evaluation, the student must demonstrate competency in all mandatory procedures. Students may not perform competencies on procedures before didactic instruction or successful lab evaluation.

1. Didactic Instruction and Evaluation:
  - Unit Lecture/Exam
2. Lab Evaluation:
  - Instruction
  - Observation
  - Practice
  - Assessment
3. Clinical Education:
  - Observe the procedure performed by qualified technologist.
  - Perform procedure at least once with direct supervision.
4. Competency evaluation

## Radiography students:

- The student may be evaluated by faculty or by a technologist.
  1. The first choice must be faculty.
  2. The second choice is a technologist.
- When a technologist performs the competency:
  1. The technologist will evaluate "Producing the Image".
  2. Faculty will perform the "Image Evaluation" and place a grade on the competency. Second year students may have a Designated Clinical Instructor perform "Image Evaluation" with the approval of faculty.
- The student may perform the examination with indirect supervision after successfully achieving competency.

## Sonography students:

- The student may be evaluated by faculty.
- The student may perform the examination with indirect supervision after successfully achieving competency.

## **Clinical Competency Evaluation**

### **Radiography**

The student MUST:

1. Notify faculty or technologist that he/she is ready to perform a competency.
  - Select the procedure from the competency checklist in Trajecsys.
  - Indicate required patient information.
2. Use assigned student markers.
3. Be ready to perform the procedure independently.
4. Use appropriate shielding essential for radiation protection.
  - Any student who fails to shield appropriately will fail the competency.
5. Be able and prepared to discuss the evaluation criteria for the procedure.
6. Be able to identify structures shown on the image.
  - Points will be deducted according to the point distribution for each objective that is not satisfactorily completed.
7. A final grade will be assigned only after the student has correctly explained the evaluation criteria and identified the structures shown during Image Evaluation.
8. Pass each competency with a grade of 76% or higher.

### **Sonography**

The student MUST:

1. Pass each competency with a grade of 76% or higher.
2. Communicate with supervising technologist or faculty prior to exam that he/she is working on a competency so that images are saved in PACS.
3. Document the exam in the clinical examination log.
4. Select the correct competency form.
5. Fill the competency form out completely.
6. Sign and date the competency form.
7. The limit of accession numbers per competency is determined by the level of progression of the student.
8. Submit obstetrics and breast competencies with:
  - Each image cut to fit portfolio.
  - All patient information removed.
  - Labeling and initials displayed on each image.
9. Submit to Clinical Instructor.

### **Delinquent Competencies**

All competencies must be completed according to the clinical education plan (Competency Checklist).

### **Failed Clinical Competency Evaluation**

A student has two attempts to complete a competency evaluation.

If the student does not successfully complete the evaluation on the first attempt, the student must:

- Complete remediation assigned by faculty.
- Practice the examination under direct supervision (documented). Sonography students may perform second attempt under indirect supervision.
- Repeat the competency.



Students must successfully complete all competencies to satisfy requirements for graduation. Students who fail clinical education will be withdrawn from the program.

### **Clinical Capstone (Radiography students only)**

The clinical capstone is a comprehensive assessment in which students demonstrate simulations of radiographic procedures identified by the program as essential. The clinical capstone excludes procedures that require the use of contrast media.

1. All clinical competencies must be completed before students are eligible for clinical Capstone.
2. Capstone is conducted in the second year of the program.
3. Students with extended enrollment may complete the Capstone during the final semester of extended enrollment.
4. All students must pass Capstone to satisfy graduation requirements.

### **Failed Clinical Capstone (Radiography students only)**

#### **First attempt**

A student has two attempts to successfully complete the Capstone during the sixth semester.

If the student does not successfully complete the capstone on the first attempt, the student must:

- Complete remediation.
- Review the capstone procedures independently.
- Practice the procedures for the entire capstone, independently.
- Schedule practice time with faculty for clarification.
- Repeat entire Capstone.

#### **Second Attempt**

If the student fails the second attempt, the student will:

1. Not graduate as scheduled.
2. Complete extended enrollment through the summer semester following the graduation ceremony.

### **Terminal Competencies**

All students must satisfactorily complete the objectives of the terminal competencies at the end of the program to satisfy graduation requirements.

### **Proficiencies**

In order to guarantee a student is proficient in the various procedures learned throughout the program, a designated number of proficiencies will be due at the end of each semester. Proficiencies follow the same format and rules as competencies.

## **CLINICAL EDUCATION RECORDS**

### **Clinical Documentation (Trajecsys)**

As part of the Competency Based Clinical Education (CBCE) plan, the student must maintain clinical documentation in the Trajecsys Reporting System. The digital 'binder' contains an ongoing record of the student's clinical experience, as well as the clinical competency requirements and dates of completion.

1. Information must be maintained daily.
2. Clinical Documentation must include the following:
  - a. Clinical syllabus
  - b. Clinical competency requirements
  - c. Competency evaluations

- d. Student evaluations of technologists
  - e. Examination daily log/Skill Summary
  - f. Clinical performance objectives
3. The program records exam totals as evidence of the student's clinical participation.
  4. The clinical instructors will review examination records periodically throughout the semester
    - Each review will receive a grade and the grade will count towards the clinical exam log grade for the semester.
    - The examination log must be up-to-date at review to receive 100%.

***Unsatisfactory examination log checks will result in disciplinary action.***

### **Examination Log (Trajecsys)**

The examination log is the mechanism used by the program for the students to document clinical participation and clinical supervision.

The student must:

- Document all examinations in which the student participates.
- Document the level of supervision provided for the procedure.
- Provide month, day and year.

### **Clinical Skill Exam Summary**

Exam summary is a clinical skill numerical summary of exam experiences for each two-week clinical rotation

The student must:

1. Maintain examination logs daily for each clinical rotation.

### **Clinical Education Grade Distribution**

#### **Clinical Education I-V:**

<b>Category</b>	<b>Weight</b>
Competencies	60%
Performance Evaluations by instructors	25%
Clinical Examination log	10%
Clinical Instructor Evaluation by Student	5%

*\*Students are evaluated by Instructors and technologists*

### **Clinical Education Grading System:**

The following grading system is used throughout the program:

<b>Grade</b>	<b>Number Grade</b>	<b>Grade Points</b>
A	94-100	4.0
B	86-93	3.0
C	76-85	2.0
F	Below 75	0.0

### **Clinical Education Grade Requirements:**

Minimum semester average to pass Clinical Education is a 76.

Students who fail clinical education (*semester average of below 76*) will be withdrawn from the program.

## APPENDIX I

### RADIOGRAPHY CURRICULUM

The radiography program utilizes the radiography curriculum designed by The American Society of Radiologic Technologists (ASRT) and adopted by the ARRT. The curriculum shall include, but is not limited to the following areas:

- Introduction to Radiologic Technology (Includes Medical Ethics and Law and Medical Terminology)
- Introduction to Patient Care
- Methods of Patient Care (Includes Pharmacology)
- Radiographic Procedures I – IV (Includes Human Anatomy and Physiology)
- Principles of Radiographic Exposure I and II (Image Production)
- Radiation Physics
- Radiographic Pathology (includes an introduction to cross-sectional anatomy)
- Pathology Research
- Advanced Imaging Equipment
- Introduction to Quality Assurance and Quality Control
- Radiation Protection
- Radiobiology
- Evaluation of Radiographs
- Comprehensive Review & Evaluation Circuit Part I, II, & III
- Capstone in Radiography
  - Clinical
  - Didactic
- Competency-Based Clinical Education
  - Clinical Education I-V

## Radiography Curriculum

Course	Credit Hours
<b>FIRST YEAR</b>	
<b>First Semester – Summer I</b>	
Introduction to Radiologic Technology	2
Introduction to Patient Care	2
Introduction to Radiographic Procedures I	2
Radiographic Procedures I – Lab	1
<b>SEMESTER TOTAL</b>	<b>7</b>
<b>Second Semester - Fall I</b>	
Methods of Patient Care	3
Principles of Radiographic Exposure I	3
Radiographic Pathology with Introduction to Cross-sectional anatomy	3
Radiographic Procedures II	3
Radiographic Procedures II – Lab	1
Competency- based clinical education I	2
<b>SEMESTER TOTAL</b>	<b>15</b>
<b>Third Semester – Spring I</b>	
Principles of Radiographic Exposure II	3
Radiation Physics	3
Radiographic Procedures III	3
Radiographic Procedures III- Lab	1
Competency – based clinical education II	2
<b>SEMESTER TOTAL</b>	<b>12</b>
<b>SECOND YEAR</b>	
<b>Fourth Semester – Summer II</b>	
Competency-based clinical education III	4
Comprehensive Review and Evaluation Circuit Part I	2
Research (subject to change)	2
<b>SEMESTER TOTAL</b>	<b>6 (8)</b>
<b>Fifth Semester – Fall II</b>	
Radiographic Procedures (Specials) IV	3
Evaluation of Radiographs	3
Radiation Protection	2
Comprehensive Review and Evaluation Circuit Part II	2
Competency – based clinical education IV	3
<b>SEMESTER TOTAL</b>	<b>13</b>
<b>Sixth Semester – Spring II</b>	
Introduction to Quality Assurance /Quality Control	3
Radiobiology	3
Comprehensive Review and Evaluation Part III	4
Advanced Imaging Equipment	2
Competency –based clinical education V	3
<b>SEMESTER TOTAL</b>	<b>12</b>
<b>TOTAL</b>	<b>68 (70)</b>

16 contact hours class	= 1 credit hour
2 contact hours lab/week	= 1 credit hour
8 contact hour clinical/week	= 1 credit

## **RADIOGRAPHY COURSE DESCRIPTIONS**

### **Introduction to Radiologic Technology (Includes Medical Terminology and Medical Ethics & Law)**

This course is designed to introduce the student to both medical radiography and the radiology department as a whole. Students will complete the introductory course with a basic understanding of the complexities of general health care, the special dimensions of radiology, and a clear awareness of the unique role and responsibility of the technologist. The course includes basic medical terminology that will enhance student learning of healthcare language.

PREREQUISITE: Acceptance into the medical radiography program

### **Introduction to Patient Care**

This course is designed to introduce the radiography student to a more complete understanding of the special needs of patient care in the medical imaging department. This course provides opportunities to develop and /or improve communication skills with both patients and the staff. During this course the students will examine the physical and psychological needs of patients and family, infection control procedures, safety principles, proper body mechanics and vital signs.

PREREQUISITE: Acceptance into the medical radiography program.

### **Methods of Patient Care**

This course is designed to introduce the technologist to a complete understanding of special needs of patients in the radiology department. This course provides opportunities to develop and /or improve communication skills with both patients and staff. During the course, the students will examine safety principles, emergency situation and first aid, infection control, medications and contrast media and reactions, pharmacology and drug administration, patient preparation and patient care in mobile radiography. ARRT General Patient Care -Vital Sign and Crash Cart Competencies will be completed as a course requirement.

PREREQUISITE: Complete of Summer I

### **Radiographic Procedures I – III**

This course is designed to provide the student with knowledge of positioning skills necessary to perform standard radiographic procedures and a summary knowledge of special studies. This course includes lab exercises to compliment the didactic portion of the course. Radiographic evaluations are included.

PREREQUISITE I: Acceptance into the medical radiography program.

PREREQUISITE II: Radiographic Procedures I

PREREQUISITE III: Radiographic Procedures II

### **Radiographic Procedures IV – (Special Radiographic Procedures)**

This course is designed to study procedures not considered common to routine radiographic procedures. Often these procedures involve the use of contrast media and sterile procedures and require a physician to perform the exam. Students will be introduced to the anatomy of the body to be examined, patient preparation, equipment, contrast media, indications, contraindications, procedures and imaging sequence.

PREREQUISITE: Radiographic Procedures I – III and Human Anatomy & Physiology

**Radiographic Procedures Lab I – III:** Corresponds with the Radiographic Procedures Class being taught in the same semester.

PREREQUISITE I: Acceptance into the medical radiography program.

PREREQUISITE II: Radiographic Procedures I

PREREQUISITE III: Radiographic Procedures II

### **Principles of Radiographic Exposure I**

This course introduces the student to the principles of radiographic imaging and the factors that control radiographic exposure in analog and digital imaging. The following topics will be included: the x-ray tube construction and x-ray production, photographic and geometric properties of the radiographic image, and the production and control of scatter radiation.

PREREQUISITE: Completion of Summer I

### **Principles of Radiographic Exposure II**

The course introduces the student to image receptors, exposure factor selection and the essentials of image formation and processing in analog and digital imaging.

PREREQUISITE: Principles of Radiographic Exposure I

### **Radiation Physics**

This course introduces the student to x-ray production, basic circuits, methods of rectification, construction of x-ray tubes, and the structure and function of x-ray equipment. Units of measurement, the physical concept of energy, the structure of matter, electrostatics, electrodynamics, magnetism, electromagnetism, and electric generators and motors will be included.

PREREQUISITE: Completion of coursework for Fall I

### **Radiographic Pathology (includes introduction to cross-sectional anatomy)**

This course provides a general survey of medical and surgical diseases encountered in diagnostic radiography. Basic cross sectional anatomy will be included

PREREQUISITE: Human Anatomy & Physiology and Medical Terminology

### **Imaging Advancements Research Paper**

This paper will provide the student with the fundamental principles of research. The student will select a pathology including an advanced technology topic, complete the review of the literature, compose the research findings into a research paper and present the paper to the class. This assignment will also serve as a mechanism for evaluating communication skills. Students are encouraged to present the completed project at the annual state meeting (TSRT).

### **Advanced Imaging Equipment**

This course is designed to provide the student with the knowledge of equipment routinely utilized to produce diagnostic images. Various recording media and techniques are also discussed. Computers in radiologic science are included.

PREREQUISITE: Principles of Radiographic Exposure I and II, Radiation Physics

### **Introduction to Quality Assurance and Quality Control**

This course introduces the student to a quality assurance program and quality control techniques. This course will provide the student with an introduction to evaluation of radiographic systems to assure quality in the delivery of all aspects of radiographic services. The components involved in the quality improvement system will be identified. State, federal, and professional impacts will be described. Computers in radiologic science are included.

PREREQUISITE: Radiation Physics, Principles of Radiographic Exposure and Advance Imaging Equipment

### **Radiation Protection**

This course will provide the student with an overview of the principles of radiation protection, including the responsibilities of the technologist for patients, personnel, and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and healthcare organizations will be presented.

PREREQUISITE: Principles of Radiographic Exposure and Radiation Physics and Human and Anatomy and Physiology

### **Radiobiology**

This course will include an overview of the principles of the interaction of radiation with living systems. Radiation effects on biological molecules, cells, tissues and the body as a whole are presented. Factors affecting biological response are presented, including acute and chronic effects of radiation.

PREREQUISITE: Principles of Radiographic Exposure and Radiation Physics and Human and Anatomy and Physiology

### **Evaluation of Radiographs**

Throughout the educational period, students should participate in regular sessions for film evaluation. These sessions are conducted under the supervision of faculty. As the student progresses, the complexity of the images to be evaluated and the level of critique will increase. During the Fall II semester, a formal class in film evaluation is conducted.

PREREQUISITE: Human Anatomy and Physiology, Principles of Radiographic Exposure, Radiographic Procedures

### **Comprehensive Review and Evaluation Circuit (I-III)**

This course is ultimately designed to provide the student with a systematic comprehensive review of all of the coursework completed throughout the program and to prepare the student to successfully complete the ARRT examination on the first attempt. Instruction in career preparation is also included.

PREREQUISITE: Completion of all coursework through Fall II semester

### **Competency- Based Clinical Education (I -V)**

This course is designed to provide the student with the clinical skills necessary to perform as an entry-level technologist. The student will complete the objectives of the structured, competency-based educational plan designed for Harris Health System School of Diagnostic Medical Imaging.

PREREQUISITE: Radiographic Procedures I-IV

### **CLINICAL RESPONSIBILITIES AND OBJECTIVES**

Clinical rotation schedules are posted in the school office and the clinical areas.

Any changes to the scheduled rotations require the approval of program administration.

### **Clinical rotations**

In the course of the program, the student is given the opportunity to rotate through each of the following clinical areas:

General Diagnostic (Routines)  
Emergency Center  
Fluoroscopy

Bone Densitometry  
Cardiac Cath Lab  
PET/CT (elective)

Surgery/OR (Operative)  
Portables (mobile radiography)  
Bone Clinic  
Computed Tomography (CT)  
Interventional Radiography  
Ultrasound (elective)

Magnetic Resonance Imaging (MRI) (elective)  
Nuclear Medicine (elective)  
Mammography (elective)  
Radiologic Science Education (elective)  
Informatics (PACS) (elective)  
Biomedical Engineering-Radiology (elective)

## General Requirements

- Correctly use two (2) identifiers for patient identification
- Correctly select patients from the network and local worklists
- Use appropriate CR/DR for image acquisition
- Correctly annotate information on digital images as required
- Correctly operate IP readers to include basic maintenance of IPs

The student will:

- **Requisition Evaluation**
  - Locate and verify the patient's name, gender, age, accession number, and medical record number
  - Locate and verify radiographic procedure(s) to be performed
  - Locate and verify the mode of transportation
  - Identify clinical indications or pathological conditions listed
  - Note any special patient handling instructions or precautions
- **Exam Room Preparation**
  - Assemble correct supplies for procedure
  - Organize and stock cabinets with supplies, linens, and all accessories
  - Clean equipment, table, and accessories
- **Patient Assessment**
  - Introduce self to patient
  - Verify the correct patient using no less than two identifiers: i.e. wristband and patient to verify name/date of birth
  - Verify patient preparation i.e. NPO.
  - Check for indications or contraindications for the examination (pathology, allergies, pregnancy, etc.)
  - Secure patient's belongings in the radiology department
  - Safely transfer patient with assistance
  - Assess and monitor patient's condition at regular intervals
  - Assure that the patient is not left unattended
- **Patient Management**
  - Explain the examination
  - Give clear concise instruction on patient transfer
  - Communicate proper instructions during the examination
  - Give correct breathing instructions
- **Equipment Operation**
  - Correctly manipulate equipment
  - Properly operate and set console
  - Use appropriate SID and central ray (CR) angulations for procedures
  - Align CR with image receptor (IR)
  - Manipulate tube to demonstrate part of interest
  - Select and use the proper size IR for the part being examined



- Use the correct L and R anatomic student markers
- Use appropriate annotations as required for special procedures (e.g. small bowel series, IVU's etc.)
- **Technique Selection**
  - Measure patient to determine part thickness
  - Utilize technique chart to determine correct exposure
  - Adjust exposure factors to accommodate for equipment, age, body habitus, and pathology
- **Positioning**
  - Perform procedures with confidence
  - Position the patient correctly on the table or upright image receptor, stretcher, or wheelchair
  - Position the part to adequately demonstrate area of interest
  - Align area of interest to CR and IR
- **Radiation Protection**
  - Wear radiation monitor correctly as instructed
  - Collimate as required
  - Use gonadal shields for patients when appropriate
  - Wear lead apron and gloves when appropriate
  - Close doors to exam rooms during x-ray exposure
  - Protect visitors and other personnel from unnecessary radiation
  - Have technologist approve all imaging procedures
- **Image Processing**
  - Complete all post-processing requirements
  - Be knowledgeable of the CQI monitors being conducted and perform at or above the level indicated by the monitor
  - Track procedures in Epic
- **Image Evaluation**
  - Identify correct positioning, degree of rotation and anatomy
  - Identify acceptable image quality
  - Suggest corrective measures to improve image

### **General Diagnostic Routines/Emergency Center (EC)**

Upon completion of this rotation, the student must be able to:

- Clean exam rooms and work- sort area
- Stock rooms with supplies and linen
- Make sure there is a hamper with a clean bag in each room
- Be knowledgeable of departmental protocol for performing procedure
- Practice ALARA
- Properly dismiss the patient
- Review images with technologist before he/she sends the images to PACS
- Track procedures to leave department status in the Epic system
- Record procedure in the clinical examination log
- Be knowledgeable of the CQI monitors being conducted

### **Ortho Radiology - Bone Clinic**

Upon completion of this rotation, the student must be able to:

- Clean exam rooms and work- sort area
- Clean all equipment
- Stock rooms with supplies and linen

- Make sure there is a hamper with a clean bag in each room
- Perform procedures common to Ortho Radiology rotation
- Practice ALARA
- Track procedures to leave department status in the Epic system
- Record procedure in the clinical examination log
- Properly dismiss the patient
- Be knowledgeable of the CQI monitors being conducted

## Portables

Upon completion of this rotation, the student must be able to:

- Remain with the technologist assigned to portables
- Perform procedures with **direct supervision**
- Determine correct IPs and equipment necessary for procedure (e.g. grids and decubitus boards)
- Identify and adhere to isolation or special handling instructions
- Practice standard precautions, patient care, and radiation protection at all times
- Correctly position the portable machine by patient's bed or stretcher side
- Correctly place IP in protective cover and under patient for exam
- Correctly position the part to be examined
- Select correct exposure factors
- Alert nearby staff before making exposure
- Place patient back in a comfortable position
- Carefully manipulate all equipment
- Clean portable machine
- Practice ALARA
- Protect self and others from radiation exposure by using cardinal rules of radiation protection (time, distance, and shielding)
- Maintain lead apron(s) with machine
- Turn off or charge portable equipment when it is not being used
- Return portable machine, equipment and supplies to assigned location
- Annotate images with correct information
- Track procedures to leave department status in the Epic system
- Record procedure in the clinical examination log
- Be knowledgeable of the CQI monitors being conducted.

## Surgery

Responsibilities:

- Remain with the technologist assigned to surgery
- Perform procedures with direct supervision
- Be available for all surgery cases in which radiology is requested
- Dress appropriately for surgery
  - Surgical attire specified in "Dress Code" in student handbook
  - Wear hair and shoe covers
  - Wear mask when in the surgery suite (during the procedure)
  - If you have to leave out of the surgery area during the day
    - Wear a lab coat to cover surgical scrubs
    - Remove shoe covers, hat, and mask before leaving area
- Clean all imaging equipment and accessories before and after each surgical procedure.

- Maintain supplies

**Upon completion of this rotation, the student must be able to:**

- Correctly manipulate both the portable and C-arm equipment into and out of the OR room without contaminating the sterile field
- Select proper exposure factors
- Select correct IPs (portables)
- Demonstrate sterile technique
- Protect self and others from radiation exposure by using cardinal rules of radiation protection (time, distance, and shielding)
- Inform staff when exposure is about to be made or is being made
- Manipulate the locks and steer c-arm during a routine surgical procedure
- Print digital images when necessary
- Process C-arm or digital images
- Correctly generate the surgery requisition
- Track procedures to leave department status in the Epic system
- Record procedure in the clinical examination log
- Be knowledgeable of the CQI monitors being conducted

**Fluoroscopy**

Responsibilities:

- Clean exam rooms and work- sort area
- Stock rooms with supplies and linen
- Make sure there is a hamper with a clean bag in each room
- Remain with the technologist during examination
- Perform procedures with direct supervision
- Practice ALARA
- Protect self and others from radiation exposure by using cardinal rules of radiation protection (time, distance, and shielding)
- Maintain lead apron(s) (full body, waist, and thyroid)
- Clean all imaging equipment and accessories before and after each fluoroscopic procedure.
- Maintain supplies

**Upon completion of this rotation, the student must be able to:**

- Assist technologist and radiologist with fluoroscopic procedures
- Select correct examination supplies
- Demonstrate sterile technique
- Protect self and others from radiation exposure by using cardinal rules of radiation protection (time, distance, and shielding)
- Track procedures to leave department status in the Epic system
- Record procedure in the clinical examination log
- Be knowledgeable of the CQI monitors being conducted

**Computed Tomography**

Upon completion of this rotation, the student must be able to:

- Adequately assess patient
- Identify specific safety aspects of CT

- Identify components of CT system
- Discuss functions of all CT equipment
- Identify the contrast medium used in CT
- Locate supplies for daily use
- Discuss protocols for CT scans
- Identify and locate landmarks used in centering for CT scans of the head, chest, abdomen and pelvis
- Position the patient on the table for head and abdomen scans
- Load power injector
- Manipulate table controls
- Change head and abdomen cradle
- Differentiate between abdominal CT and head CT procedures
- Identify cross-sectional anatomy in the brain and abdomen
- Bring the scan menu up and type in patient information
- Explain the procedure(s) to the patient
- Complete procedures in the computer
- List patients in log book
- Clean the equipment correctly
- Locate supplies in room
- Stock room with supplies and linen
- Keep room neat and organized for routine scans
- Be knowledgeable of the CQI monitors being conducted.

### **Magnetic Resonance Imaging**

Upon completion of this rotation, the student must be able to:

- Locate supplies for daily usage
- Identify and discuss specific safety aspects of MRI
- Identify components of MRI system
- Identify functions of all MRI equipment
- List the systems used for patient monitoring
- Identify the contrast medium used in MRI
- Discuss different protocols for MRI scans
- Instruct patient on proper dressing procedure
- Assist patient into the room
- Give a basic explanation of procedure to be performed
- Identify and demonstrate landmarks used in centering patients for MRI scans
- Clean room and equipment properly
- Stock room up with supplies and linen
- Be knowledgeable of the CQI monitors being conducted

### **Interventional Radiology/Special Procedures**

Upon completion of this rotation, the student must be able to:

- Assist with the stocking the rooms
- Discuss patient preparation for each procedure performed
- Discuss the importance of informed consent
- Assist in setting up for a procedure
- Differentiate between sterile and a non-sterile field

- Set up a sterile tray
- Assist in a sterile procedure without contaminating the field
- Explain procedure to patient
- Identify vascular anatomy
- Discuss the procedures performed in IR
- Differentiate between the types of guide wires and catheters
- Be knowledgeable of the CQI monitors being conducted.

### **Cardiac Catheterization Lab**

Upon completion of this rotation, the student must be able to:

- Assist with the stocking up of the room
- Identify the importance of informed consent
- Identify if there is any necessary patient prep
- Assist in setting up for a procedure
- Be knowledgeable of the correct use of the power injector
- Correctly set up a sterile tray
- Differentiate between sterile and non-sterile fields
- Assist in a sterile procedure without contamination
- Correctly enter new patients into the imaging system
- Correctly manipulate the C-arm and table
- Explain the procedure to the patient
- Identify cardiac anatomy and vasculature
- Correctly close the procedure and send images to the archiving system
- Identify the different procedures
- Identify the different types of guide wires and catheters
- Be knowledgeable of radiation protection and safety in the cath lab
- Be knowledgeable of the CQI monitors being conducted.

### **Ultrasound (Elective)**

Upon completion of this rotation, the student must be able to:

- Identify the different types of ultrasound procedures performed in the ultrasound department
- Identify the appropriate questions asked for each procedure
- Read a requisition and determine the procedure needed
- Prepare patient for procedure
- Assist patient into a room
- Identify the orientations of scanning
- Observe at least one of each routine procedure
- Properly demonstrate turning on and off the ultrasound system
- Explain the different types of patient prep for routine procedures in ultrasound
- Identify types of probes/transducers used and their purposes.
- Explain how to care for the transducers/probes.
- Explain and demonstrate the correct methods of switching transducers.
- Explain the relationship between frequency, resolution and depth penetration.
- Explain why it is difficult to scan through bowel gas and how to overcome it.
- Identify the different Doppler modalities.
- Explain the significance of gel in scanning
- Fill gel bottles

- Stock the rooms with linen and supplies
- Be knowledgeable of the CQI monitors being conducted.

### **Nuclear Medicine (Elective)**

***All students must bring objectives to the nuclear medicine supervisor on the FIRST day of the rotation.***

Upon completion of this rotation, the student must be able to:

- Practice appropriate radiation safety
- Stock room with linen and supplies
- Dress patient for procedure
- Properly explain the procedure to patient
- Identify the different radiopharmaceuticals; Explain the difference in their functions
- Differentiate cardiac studies and stress test
- Discuss ventilation perfusion studies
- Discuss general studies performed
- Identify the different cameras
- Explain the difference in their functions
- Be knowledgeable of the CQI monitors being conducted

### **Mammography (Elective)**

Upon completion of this rotation, the student must be able to:

- Clean the mammography unit.
- Clean the mammography IPs.
- Load and unload IPs in the CR reader.
- Assist and explain the daily quality control process.
- Assist patient with dressing for procedure.
- Assist patient with history/questionnaire.
- Identify the proper positioning projection.
- Identify normal breast anatomy.
- Identify the diagnostic procedures performed in mammography.
- Perform CC and MLO projections.
- Assist with needle localization
- Assist with stereotactic Biopsy
- Discuss galactography
- Track and charge for procedure in the RIS
- Be knowledgeable of the CQI monitors being conducted.

### **Informatics (Elective)**

Upon completion of this rotation, the student must be able to:

- Learn the components of a PC workstation
- Learn the standard radiology information system integration with the hospital information system
- Understand how Picture Archiving and Communications System (PACS) benefits the radiology department
- Learn the computer applications used in the Imaging Department
- Learn the importance of the Accession Number
- Learn how to look for incorrect or abnormal data in all radiology computer applications
- Understand the image workflow (Acquisition, Dictation, and Radiologists Signoff)

- Observe and assist in data correction (images and results)

### **Radiologic Science Education (Elective)**

Upon completion of this rotation, the student must be able to:

- Understand the process of curriculum design
- Explain the process of syllabus preparation
- Explain the process of lesson preparation
- Learn and understand the process of assessment and evaluation of educational outcomes
- Expand on professional development by observing the demands of an instructor and learn the practice of decision making in medical imaging education (Deliverables: Provide journal entries on decisions and results as well as reflection and comments on what I would do the same/different and expected outcomes of such a decision).

### **Biomedical Engineering (Elective)**

Upon completion of this rotation, the student must be able to:

- Identify the daily tasks of a biomedical engineer
- Identify the various medical equipment of the radiology department
- Assist in ensuring that all medical equipment is operating in a safe manner
- Recognize the testing tools used for medical equipment maintenance and repair
- Observe and assist in electrical safety checks of the medical equipment
- Assess asset tag expiration on various radiologic equipment
- Identify risk levels for medical equipment based upon manufacturer's recommendations and criteria
- Observe the removal of outdated or the installation new medical equipment in the radiology department \* (If applicable)

## Clinical Education I – V Syllabus

### Faculty

John Donahue, MSRS, RT (R)(ARRT)  
Hazel Bourne, MS, RT (R)(M)(CT)(ARRT)  
Wilson Phung, BA, RT (R)(MR)(ARRT)

### Clinical Coordinators

Wilson Phung, BA, RT (R)(MR)(ARRT)  
John Donahue, MSRS, RT (R)(ARRT)

### Clinical Instructors

Sharonda Adkins, BSRT, RT (R)(ARRT)  
Gwendolyn Alexander, RT (R)(ARRT)  
Kalyn Victoria McCalister RT(R)(CT)(ARRT)  
Gracy Koshy, RT (R)(ARRT)  
Annamma Kuriakose, RT (R)(ARRT)  
Cruz D. Vasquez, RT (R)(ARRT)  
Norma Martinez, AA, RT (R)(ARRT)

### OFFICE NUMBERS

Fournace: 346-426-1530  
BT: 713-873-2248  
LBJ: 713-566-9043  
MLK: 713-547-1180  
Vallbona: 713-272-2611  
Casa De Amigos: 713-236-7140  
Aldine: 281-985-7757  
Smith: 713-873-2438  
El Franco Lee: 281-454-0983

### Supplies

Radiation dosimeter, procedures pocket guide/notebook,  
Student anatomic markers and pen

### Clinical Education I-V:

Category	Weight
Competencies	50%
Performance Evaluations by instructors	30%
Clinical Exam log	10%
Technologist Evaluation by Student	5%
Student Evaluation by Technologist	5%



## Clinical Education Grading System:

The following grading system is used throughout the program:

Grade	Number Grade	Grade Points
A	94-100	4.0
B	86-93	3.0
C	76-85	2.0
F	Below 75	0.0

## Clinical Education Grade Requirements:

Minimum semester average to pass Clinical Education is a 76.

Students who fail clinical education (*semester average of below 76*) will be withdrawn from the program.

## Clinical Education I – Fall I

### Course Description

This course consists of clinical experiences in radiologic and fluoroscopic procedures, most of which will be performed under direct supervision. It enables the student to become familiar with hospital and departmental policies and procedures, patient care skills, body mechanics, and radiographic procedures. The student will strive to master basic skills and competency through a structured, competency-based clinical education plan designed for Harris Health System School of Diagnostic Medical Imaging.

**Schedule:** Tuesday & Thursday 7:00 AM – 3:00 PM

### Objectives

Upon completion of Clinical Education II the student should be able to:

1. Students must perform procedures with direct supervision until they achieve competency.
2. Students must **ALWAYS** perform operative and mobile procedures and procedures in the shock rooms with direct supervision.
3. Repeat images must **ALWAYS** be performed with direct supervision
4. Evaluate a requisition for pertinent information
5. Adequately prepare the exam room
6. Identify the correct patient for the correct procedure
7. Assess the patient and give proper instructions for the procedure being performed
8. Assist in moving and transporting the patient using safe body mechanics
9. Select and use the correct image receptors and markers
10. Demonstrate basic radiation protection for patient, self and the public
11. Manipulate equipment
12. Become involved in the everyday activities of the radiology department and become orientated to the policies and procedures of the hospital and the radiology department
13. Maintain clinical log
14. Practice Communication skills and AIDET
15. Acquire images
16. Correctly position the patient radiographic examinations.
17. Complete competency evaluations in procedures completed in lab
18. Complete the number of mandatory competencies and electives required.

19. Become involved in the everyday activities of the radiology department and become orientated to the policies and procedures of the hospital and the radiology department.
20. Have a technologist approve all imaging procedures and examination prior to performing, upon completion prior to close study/finish, to PACS, and initial clinical examination log.

## Clinical Education II – Spring I

### Course Description

This course consists of clinical experiences in radiologic and fluoroscopic procedures performed under direct and indirect supervision. It enables the student to become familiar with hospital and departmental policies and procedures, patient care skills, body mechanics and radiographic procedures. The student will strive to master basic skills and competency through a structured, competency-based clinical education plan designed for Harris Health System School of Diagnostic Medical Imaging.

*Prerequisite:* Clinical Education I

**Schedule:** Tuesday & Thursday 7:00 AM – 3:00 PM

### Student Learning Outcomes

Upon completion of clinical education III the student should be able to:

1. Apply the basic principles of radiography to perform radiographic procedures  
Students must perform procedures with direct supervision until they achieve competency'  
Students must **ALWAYS** perform operative and mobile radiographic procedures and procedures in the shock rooms with direct supervision. Repeat images must **ALWAYS** be performed with direct supervision.
2. Evaluate the requisition for pertinent information
3. Adequately prepare the exam room
4. Identify the correct patient for the correct procedure
5. Assess the patient and give proper instructions for the procedure being performed
6. Assist in moving and transporting the patient using safe body mechanics
7. Perform general radiographic procedures for which clinical competencies have already been determined with 8. Indirect supervision and assist with all other radiographic and fluoroscopic procedures under direct supervision
9. Demonstrate basic radiation protection for patient, self and the public
10. Select and use the correct image receptors
11. Select the correct source to image receptor distance
12. Manipulate radiographic equipment
13. Acquire of images
14. Correctly position the patient for radiographic examinations
15. Complete competency evaluations in all radiographic procedures evaluated in lab
16. Complete the number of mandatory competencies and electives required
17. Become involved in the everyday activities of the radiology department and become orientated to the policies and procedures of the hospital and the radiology department.
18. Have a technologist approve all radiographic procedures and examination prior to performing, upon completion prior to close study/finish, to PACS, and initial clinical examination log.
19. Maintain clinical exam log daily.

## Clinical Education III – Summer II

### Course Description

This course consists of clinical experiences in radiologic and fluoroscopic procedures performed under direct supervision. It enables the student to become familiar with hospital and departmental policies and procedures, patient care skills, body mechanics and radiographic procedures. The student will strive to master basic skills and competency through a structured, competency-based clinical education plan designed for Harris Health System School of Diagnostic Medical Imaging.

*Prerequisite:* Clinical Education II

**Schedule:** Monday – Thursday 7:00 AM – 3:00 PM (Fridays are research/makeup days)

### Student Learning Outcomes

Upon completion of clinical education IV the student should be able to:

1. To apply the basic principles of radiography to perform radiographic procedure  
Students must perform procedures with direct supervision until they achieve competency'  
Students must **ALWAYS** perform operative and mobile radiographic procedures and procedures in the shock rooms with direct supervision.  
Repeat images must **ALWAYS** be performed with direct supervision
2. Evaluate the requisition for pertinent information
3. Adequately prepare the exam room
4. Identify the correct patient for the correct procedure
5. Assess the patient and give proper instructions for the procedure being performed
6. Assist in moving and transporting the patient using safe body mechanics
7. Perform general radiographic procedures for which clinical competency have already been achieved with indirect supervision and assist with all other radiographic and fluoroscopic procedures under direct supervision
8. Demonstrate basic radiation protection for patient, self and the public
9. Select and use the correct image receptors
10. Select the correct source to image receptor distance
11. Manipulate equipment
12. Acquire images
13. Correctly position the patient for radiographic examinations
14. Complete competency evaluations for all examinations completed in lab
15. Complete the number of mandatory competencies and electives required
16. Become involved in the everyday activities of the radiology department and become orientated to the policies and procedures of the hospital and the radiology department
17. Have technologist approve all procedures and examination prior to performing, upon completion prior to close study/finish, to PACS, and initial clinical examination log,
18. Maintain clinical exam log daily.

## Clinical Education IV – Fall II

### Course Description

This course consists of clinical experiences in radiologic and fluoroscopic procedures performed under direct supervision. It enables the student to become familiar with hospital and departmental policies and procedures, patient care skills, body mechanics and radiographic procedures. The student will strive to master basic skills and competency through a structured, competency-based clinical education plan designed for Harris Health System School of Diagnostic Medical Imaging.

*Prerequisite:* Clinical Education III

**Schedule:** Monday, Wednesday & Friday 7:00 AM – 3:00 PM

### Student Learning Outcomes

Upon completion of clinical education V the student should be able to:

1. Apply the basic principles of radiography to perform radiographic procedures  
Students must perform procedures with direct supervision until they achieve competency'  
Students must **ALWAYS** perform operative and mobile radiographic procedures and procedures in the shock rooms with direct supervision.  
Repeat images must **ALWAYS** be performed with direct supervision
2. Evaluate the requisition for pertinent information
3. Adequately prepare the exam room
4. Identify the correct patient for the correct procedure
5. Assess the patient and give proper instructions for the procedure being performed
6. Assist in moving and transporting the patient using safe body mechanics
7. Perform general radiographic procedures for which clinical competency has already been achieved with indirect supervision and assist with all other radiographic and fluoroscopic procedures under direct supervision
8. Demonstrate basic radiation protection for patient, self and the public
9. Select and use the correct image receptors
10. Select correct source to image receptor distance
11. Manipulate radiographic equipment
12. Acquire of images
13. Correctly position the patient for radiographic examinations
14. Complete competency evaluations completed for procedures completed in lab
15. Complete all mandatory competencies and electives required.
16. Become involved in the everyday activities of the radiology department and become orientated to the policies and procedures of the hospital and the radiology department
17. Have technologist approve all radiographic procedures and examination prior to performing, upon completion prior to close study/finish, to PACS, and initial clinical examination log,
18. Maintain clinical exam log daily

## Clinical Education V – Spring II

### Course Description

This course consists of clinical experiences in radiologic and fluoroscopic procedures performed under direct supervision. It enables the student to become familiar with hospital and departmental policies and procedures, patient care skills, body mechanics and radiographic procedures. The student will strive to master basic skills and competency through a structured, competency-based clinical education plan designed for Harris Health System School of Diagnostic Medical Imaging.

*Prerequisite:* Clinical Education IV

**Schedule:** Monday, Wednesday & Friday 7:00 AM – 3:00 PM

### Student Learning Outcomes

Upon completion of clinical education V the student should be able to:

1. Apply the basic principles of radiography to perform radiographic procedures  
Students must perform procedures with direct supervision until they achieve competency'  
Students must **ALWAYS** perform operative and mobile radiographic procedures and procedures in the shock rooms with direct supervision.  
Repeat images must **ALWAYS** be performed with direct supervision
2. Evaluate the requisition for pertinent information
3. Adequately prepare the exam room
4. Identify the correct patient for the correct procedure
5. Assess the patient and give proper instructions for the procedure being performed
6. Assist in moving and transporting the patient using safe body mechanics
7. Perform general radiographic procedures for which clinical competency has already been achieved with indirect supervision and assist with all other radiographic and fluoroscopic procedures under direct supervision
8. Demonstrate basic radiation protection for patient, self and the public
9. Select and use the correct image receptors
10. Select correct source to image receptor distance
11. Manipulate radiographic equipment
12. Acquire of images
13. Correctly position the patient for radiographic examinations
14. Complete clinical Capstone evaluation.
15. Complete any clinical simulation competencies as indicated by clinical faculty
16. Become involved in the everyday activities of the radiology department and become orientated to the policies and procedures of the hospital and the radiology department
17. Have technologist approve all radiographic procedures and examination prior to performing, upon completion prior to close study/finish, to PACS, and initial clinical binder examination log,
18. Maintain clinical exam log daily

## APPENDIX II

### SONOGRAPHY CURRICULUM

The curriculum shall include, but is not limited to the following areas:

- Introduction to Sonography
- Abdomen I
- Abdomen II
- Abdomen Review
- Superficial Structures & Advanced Practices
- Obstetrics and Gynecology I
- Obstetrics and Gynecology II
- Obstetrics and Gynecology III
- Obstetrics and Gynecology Review
- Introduction to Vascular Sonography
- Basic Ultrasound Physics and Instrumentation
- Advanced Ultrasound Physics and Instrumentation
- Case Studies
- Scan Lab I-III
- Pathology Research Project
- Clinical Education
  - Clinical Education I
  - Clinical Education II
  - Clinical Education III
  - Clinical Education IV
  - Clinical Education V

Curriculum	
Course	Credit Hours
<b>First Semester – Summer I</b>	
Abdominal Sonography I	3
Introduction to Sonography	3
Sonography Lab I	2
Semester Total	8
<b>Second Semester – Fall I</b>	
Obstetrics/Gynecology Sonography I	3
Basic Physics/Instrumentation	4.5
Sonography Lab II	2
Competency-based Clinical Education I	2
Semester Total	11.5
<b>Third Semester – Spring I</b>	
Superficial Structures & Advanced Practices	4
Obstetrics/Gynecology Sonography II	4
Advanced Physics/Instrumentation	4.5
Sonography Lab III	2
Competency-based Clinical Education II	2
Semester Total	16.5
<b>Fourth Semester – Summer II</b>	
Registry Review	2
Competency-based Clinical Education III	4
Semester Total	6
<b>Fifth Semester – Fall II</b>	
Abdomen Sonography II	4
Obstetrics/Gynecology Sonography III	4
Introduction to Vascular Sonography	4
Competency-based Clinical Education IV	3
Semester Total	15
<b>Sixth Semester – Spring II</b>	
Sonography Abdominal Review	4
Sonography Obstetrics/Gynecology Review	4
Sonographic Case Studies	3
Competency-based Clinical Education V	3
Semester Total	14
Total	71

**16 contact hour class = 1 credit hour**  
**2 contact hours/week = 1 credit hour**  
**8 contact hour clinical/week = 1 credit hour**

## **SONOGRAPHY COURSE DESCRIPTIONS:**

### **Introduction to Sonography:**

This course will include lecture, class discussions, demonstrations and reading assignments, which allows the student an introduction to medical sonography. Topics such as patient care, safety issues, communications, and medical ethics will be discussed. Professionalism development and lifelong learning will be emphasized. The student will also demonstrate a fundamental knowledge of basic medical terminology as it relates to the medical sonography professions.

Prerequisite: Acceptance into the medical sonography program

### **Abdominal Sonography I:**

Lecture, class discussions, and demonstrations emphasizing key medical terminology, anatomy and physiology as it relates to the abdomen, small and superficial parts. Also, evaluation of the abdomen and small parts as it relates to sonographic appearance and technique.

Prerequisite: Acceptance into the medical sonography program

### **Abdominal Sonography II**

Lecture, class discussions, and demonstrations emphasizing pathologies and disease states of the abdomen as it relates to scanning techniques, patient history, laboratory data, transducer selection, and scanning protocols. Also, evaluation of pathologies and disease states of the neonate and pediatric abdomen and small parts.

Prerequisite: Abdominal Sonography I

### **Basic Ultrasound Physics & Instrumentation**

This course provides fundamental knowledge of the physical principles and instrumentation used in medical sonography. Students will focus on the complexities of high-frequency acoustic energy and the application of this understanding to acquire diagnostic images. An in-depth study of diagnostic pulse-echo instrumentation and proper usage will be stressed. This class is a foundation to prepare students for more advanced principles.

Prerequisite: Completion of Semester I

### **Advanced Ultrasound Physics & Instrumentation**

This course provides instruction of advanced topics in ultrasound physics and instrumentation. Students will focus on the concepts of Doppler technology, Harmonics imaging and the physics of normal and diseased blood flow. Students will continue their study of Sonographic instrumentation to include temporal resolution, imaging artifacts, quality assurance, and potential bioeffects.

Prerequisite: Basic Ultrasound Physics & Instrumentation

### **Obstetrics & Gynecology I**

This class provides a detailed study of the pelvis and obstetrics/gynecology as related to ultrasound scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

Prerequisite: Completion of Semester I

### **Obstetrics & Gynecology II**



This class continues the detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Maternal disease and fetal abnormalities are introduced.

Prerequisite: Obstetrics & Gynecology I

### **Obstetrics & Gynecology III**

This class continues to examine maternal disease and fetal abnormalities as related to ultrasound.

Included are advanced instruction in scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

Prerequisite: Obstetrics & Gynecology II

### **Superficial Structures & Advanced Practices**

Lecture, class discussions, and demonstrations emphasizing key medical terminology, anatomy and physiology as it relates to normal and abnormal superficial structures. Also, evaluating and exploring advanced sonographic practices such as neonatal Neurosonology and ultrasound guided surgical procedures.

Prerequisite: Abdominal Sonography I

### **Introduction to Vascular Sonography**

In this course students are introduced to the specialized imaging field of non-invasive vascular sonography. Students will focus on the anatomy, pathology, physiology, imaging protocols, and proper scan techniques of the extracranial vessels and vessels of the upper and lower extremities. This course also introduces the student to adult echocardiography.

Prerequisite I: Abdominal Sonography I

Prerequisite II: Advanced Ultrasound Physics & Instrumentation

### **Pathology Research**

In this course students will research a pathological condition as related to the field of ultrasound. Students will be required to prepare and submit a 10 page research paper and present an oral defense of their research.

Prerequisite:

### **Sonography Case Studies**

This student participatory class examines pathological states of the human body as related to clinical sonography. Patient history, laboratory data, and imaging protocols will be presented and discussed.

Prerequisite I: Abdominal Sonography II

Prerequisite II: Obstetrics & Gynecology III

### **Abdomen Review**

Students will review and prepare for the American Registry of Diagnostic Medical Sonographers (ARDMS) abdominal registry examinations. Special emphasis will be placed exam specific material and successful test taking techniques. Students will be required to pass written capstone exams for abdominal sonography.

Prerequisite: Completion of all coursework through Fall II semester

### **Obstetrical and Gynecological Review**

Students will review and prepare for the American Registry of Diagnostic Medical Sonographers (ARDMS) obstetrics & gynecology registry examinations. Special emphasis will be placed exam specific material and

successful test taking techniques. Students will be required to pass written capstone exams for obstetrics & gynecology sonography.

Prerequisite: Completion of all coursework through Fall II semester

### **Sonographic Lab I**

Students will be instructed in normal sonographic scanning protocols. Students will perform these ultrasound scans in the laboratory. The scanning protocols for abdominal, obstetrical, gynecological, and vascular sonography will be stressed.

Prerequisite: Acceptance into the medical sonography program

### **Sonographic Lab II**

Students will be instructed in normal sonographic scanning protocols. Students will perform these ultrasound scans in the laboratory. The scanning protocols for abdominal, obstetrical, gynecological, and vascular sonography will be stressed.

Prerequisite: Sonographic Lab I

### **Sonographic Lab III**

Students will be instructed in normal sonographic scanning protocols. Students will perform these ultrasound scans in the laboratory. The scanning protocols for abdominal, obstetrical, gynecological, and vascular sonography will be stressed.

Prerequisite: Sonographic Lab II

### **Competency-based Clinical Education I**

Students will apply sonographic techniques learned in class and lab to the clinical setting. Students will be expected to demonstrate clinical competency and increasing proficiency in skill level. Students will be expected to demonstrate a high level of professionalism.

Prerequisite: Acceptance into the medical sonography program

### **Competency-based Clinical Education II**

Students will apply sonographic techniques learned in class and lab to the clinical setting. Students will be expected to demonstrate clinical competency and increasing proficiency in skill level. Students will be expected to demonstrate a high level of professionalism.

Prerequisite: Competency-based Clinical Education I

### **Competency-based Clinical Education III**

Students will apply sonographic techniques learned in class and lab to the clinical setting. Students will be expected to demonstrate clinical competency and increasing proficiency in skill level. Students will be expected to demonstrate a high level of professionalism.

Prerequisite: Competency-based Clinical Education II

### **Competency-based Clinical Education IV**

Students will apply sonographic techniques learned in class and lab to the clinical setting. Students will be expected to demonstrate clinical competency and increasing proficiency in skill level. Students will be expected to demonstrate a high level of professionalism.

Prerequisite: Competency-based Clinical Education III

## **Competency-based Clinical Education V**

Students will apply sonographic techniques learned in class and lab to the clinical setting. Students will be expected to demonstrate clinical competency and increasing proficiency in skill level. Students will be expected to demonstrate a high level of professionalism.

Prerequisite: Competency-based Clinical Education IV

### **CLINICAL RESPONSIBILITIES AND OBJECTIVES**

#### **By the end of the program the student should be able to:**

- Use two Identifiers to identify the correct patient.
- Apply appropriate communication skills with patients.
- Explain proper patient preparation for a medical sonogram.
- Instruct the patient in proper dressing protocol.
- Demonstrate how to take a proper patient history as pertaining to various sonographic procedures.
- Uses resources to look up previous testing data that is relevant to the sonographic procedure.
- Evaluates the relevance of previous lab and testing data to the sonographic procedure.
- Applies proper patient transfer techniques to and from the sonographic exam table.
- Applies good patient safety practices.
- Understands the concepts of HIPAA and applies patient confidentiality to the healthcare setting.
- Applies appropriate infection control practices in the health care setting.
- Demonstrates respect for the student-faculty relationship by following instructions and clinical policies.
- Demonstrate respect by formally addressing the staff.
- Applies professional qualities by demonstrating good attendance.
- Applies professional qualities by using correct medical terminology in the clinical setting.
- Demonstrates a positive attitude consistent with the values of the healthcare industry and ultrasound education.
- Applies appropriate communication skills with the healthcare staff.
- Utilizes the clinical telephones and computers in an appropriate respectful manner.
- Demonstrates responsibility by keeping the clinical binder up to date and in order.
- Applies critical thinking to present relevant information to the radiologist.
- Assumes responsibility for learning by taking advantage of learning opportunities in the clinic setting.
- Demonstrates good occupational safety and ergonomic practices.
- Demonstrates the benefit of a survey scan before documenting images.
- Selects the appropriate transducer for the sonographic exam.
- Enters the appropriate information into the ultrasound computer.
- Applies knowledge of optimal image acquisition by correctly adjusting the image depth.
- Applies knowledge of optimal image acquisition by correctly adjusting the image gain.
- Applies knowledge of optimal image acquisition by correctly adjusting the focal depth and number of focal zones.
- Selects the appropriate annotation to represent the proper organ, scan plane, and additional necessary information.
- Applies the appropriate uses of PW Doppler.
- Applies the appropriate uses of Color/Power Doppler.
- Applies the appropriate uses of M-Mode.
- Identifies the indication for sonographic procedures.
- Utilizes various patient positions to optimize the sonographic exam.

- Applies appropriate use of electronic calipers to measure anatomy and pathology.
- Applies understanding of the abdominal protocol by performing abdominal sonograms unassisted.
- Applies understanding of the pelvic protocol by performing pelvic sonograms unassisted.
- Performs endo-vaginal sonograms unassisted.
- Applies understanding of the obstetric protocol by performing obstetric sonograms unassisted.
- Applies knowledge of appropriate fetal measurements to calculate fetal growth.
- Applies understanding of the thyroid protocol by performing thyroid sonograms unassisted.
- Applies understanding of the scrotal protocol by performing scrotal sonograms unassisted.
- Applies understanding of the breast protocol by performing breast sonograms unassisted
- Modifies the Sonographic exam to accommodate various technical conditions.
- Differentiates between the sonographic appearances of different organs.
- Distinguish between normal and abnormal sonographic findings.
- Demonstrates proper uses PACS.
- Demonstrates proper transducer and sonographic equipment care.

## Clinical Education I – V Syllabus

### Faculty

Georgette Shepherd BHSc, ARDMS, ARRT  
James Norsworthy, RDMS AB, RVT, VT RT (R) (ARRT)  
Aarti Patel RDMS AB, OB

### Clinical Coordinator:

James Norsworthy, RDMS AB, RVT, VT RT (R) (ARRT)  
Aarti Patel RDMS AB, OB

### Supplies

Clinical binder, OB pockets guide, Notebook, and Pen.

### Clinical Instructors or DCI's (Designated Clinical Instructor)

Ben Taub	Nancy Allen	713 873 2423
Ben Taub MFM	Sangita Doshi	713 873 4530
Ben Taub IR	Steven Fontenot	713 873 2418
Smith Clinic	Shana Lee	713 566 5121
Smith Breast Clinic	Terri Vu	713 566 3475
LBJ	James Bedi	713 566 5459
LBJ MFM	Tony Tran	713 566 5935
LBJ IR	Ernest Jerez	713 566 5464

### OFFICE NUMBER

Fournace Place 346-426-1530  
BT: 713-873-2248  
LBJ: 713-566-9043

### DMSO Clinics I-V:

Students will apply Sonographic techniques learned in class and lab to the clinical setting. Students will be expected to demonstrate clinical competency and increasing proficiency in skill level. Students will be expected to demonstrate a high level of professionalism. (Prerequisite: Admission to the program).

### Clinical Education Grade Distribution

Clinical Education I-V

Category	Weight
Competencies	60%
Performance Evaluations by instructors	25%
Clinical Examination log	10%
Clinical Instructor Evaluation by Student	5%

*\*Clinical Education I - students are evaluated by Instructors only*

## **COMPETENCY REQUIREMENTS**

Students must demonstrate competency in core Sonographic procedures. These procedures include:

- Professional qualities
- Abdomen Complete
- Pelvic-Transabdominal
- Pelvic-Transvaginal
- Ob/Gyn first trimester
- Ob/Gyn second trimester or third trimester
- Breast
- Thyroid
- Scrotum
- Prostate
- Non-cardiac chest or Thoracentesis
- Neurosonology
- Carotid
- Venous

## COMPETENCIES BY SEMESTER

### Semester II

Clinical Competency	Number per Semester
Abdomen Sonogram	1

### Semester III

Clinical Competency	Number per Semester
Abdomen Sonogram	1
Trans Abdominal Pelvic Sonogram	1
Small Part Sonogram: Thyroid, Breast, Prostate or Scrotum	1

### Semester VI

Clinical Competency	Number per Semester
Abdomen Sonogram	1
Trans Abdominal/Trans Vaginal Pelvic Sonogram	1
Small Part Sonogram: Thyroid, Breast, Prostate or Scrotum	1

### Semester V

Clinical Competency	Number per Semester
Abdomen Sonogram	1
Trans Abdominal/Trans Vaginal Pelvic Sonogram	1
Small Part Sonogram: Thyroid, Breast, Prostate or Scrotum	1
Unilateral Lower Extremity Venous Sonogram	1
Unilateral Carotid Sonogram	1

### Semester VI

Clinical Competency - Capstones	Number per Semester
Abdomen Sonogram	1
Trans Abdominal/Trans Vaginal Pelvic Sonogram	1
Small Part Sonogram: Thyroid, Breast, Prostate or Scrotum	1
Bilateral Lower Extremity Venous Sonogram	1
Bilateral Carotid Sonogram	1
OB/Gyn Sonogram – 1 <sup>st</sup> trimester	1 (by graduation)
Non-cardiac chest	1 (by graduation)
Neurosonology	1 (by graduation)

### **Maternal Fetal Medicine (MFM) (Mandatory)**

Upon completion of this rotation, the student must be able to:

- Locate supplies for daily usage
- Identify specific safety aspects clinically for Obstetrical (OB) Sonography
- Identify components utilized to perform an OB, demonstrate skills with technologist as much as allowed
- Discuss different protocols for OB scans
- Instruct patient on proper dressing procedure
- Assist patient into the room
- Give a basic explanation of procedure to be performed , if allowed
- Identify and demonstrate landmarks used in OB
- Clean room and equipment properly
- Stock room up with supplies and linen
- Be knowledgeable of the some of the most common symptoms and diagnosis for OB
- Identify specific protocols and/or views utilized during an OB
- Utilize MFM specialty rotation to complete OB competencies in Sonography

### **Breast Ultrasound SMITH (Mandatory)**

Upon completion of this rotation, the student must be able to:

- Locate supplies for daily usage
- Identify specific safety aspects clinically for an Breast Sonogram
- Identify components utilized to perform an Breast Sonogram or Breast Biopsy, demonstrate skills with technologist as much as allowed
- Discuss different protocols for Breast Sonography scans
- Instruct patient on proper dressing procedure
- Assist patient into the room
- Give a basic explanation of procedure to be performed , if allowed
- Identify and demonstrate landmarks used in Breast Sonography
- Clean room and equipment properly
- Stock room up with supplies and linen
- Be knowledgeable of the some of the most common symptoms and diagnosis for Breast Sonography/Breast Biopsies
- Identify specific protocols and/or views utilized during an Breast Sonography

### **Interventional Radiology/Special Procedures in Sonography (Mandatory)**

Upon completion of this rotation, the student must be able to:

- Assist with the stocking the rooms
- Discuss patient preparation for each procedure performed
- Discuss the importance of informed consent
- Assist in setting up for a procedure
- Differentiate between sterile and a non-sterile field
- Set up a sterile tray
- Assist in a sterile procedure without contaminating the field
- Explain procedure to patient
- Be able to identify ascites
- Be able to identify organs or pathology being biopsied
- Identify vascular anatomy



- Discuss the radiography and sonography procedures performed in IR
- Differentiate between the types of guide wires and catheters
- Be knowledgeable of the CQI monitors being conducted.

### **Echocardiogram (ECHO- Elective)**

Upon completion of this rotation, the student must be able to:

- Locate supplies for daily usage
- Identify specific safety aspects clinically for an Echo
- Identify components utilized to perform an Echo
- Discuss different protocols for Echo scans
- Instruct patient on proper dressing procedure
- Assist patient into the room
- Give a basic explanation of procedure to be performed , if allowed
- Identify and demonstrate landmarks used in Echo
- Clean room and equipment properly
- Stock room up with supplies and linen
- Be knowledgeable of the some of the most common symptoms and diagnosis for Echo
- Identify specific protocols and/or views utilized during an Echo

### **Computed Tomography (Elective)**

Upon completion of this rotation, the student must be able to:

- Adequately assess patient
- Identify specific safety aspects of CT
- Identify components of CT system
- Discuss functions of all CT equipment
- Identify the contrast medium used in CT
- Locate supplies for daily use
- Discuss protocols for CT scans
- Identify and locate landmarks used in centering for CT scans of the head, chest, abdomen, liver and pelvis
- Position the patient on the table for head and abdomen scans
- Load power injector
- Manipulate table controls
- Differentiate between “pre” and “post”
- Change head and abdomen cradle
- Differentiate between abdominal CT and head CT procedures
- Identify cross-sectional anatomy in the brain and abdomen
- Bring the scan menu up and type in patient information
- Explain the procedure(s) to the patient
- Complete procedures in the computer
- List patients in log book
- Clean the equipment correctly
- Locate supplies in room
- Stock room with supplies and linen
- Keep room neat and organized for routine scans
- Be knowledgeable of the CQI monitors being conducted.

### **Magnetic Resonance Imaging (Elective)**

Upon completion of this rotation, the student must be able to:

- Locate supplies for daily usage
- Identify specific safety aspects of MRI
- Identify components of MRI system
- Identify functions of all MRI equipment
- List the systems used for patient monitoring
- Identify the contrast medium used in MRI
- Discuss different protocols for MRI scans
- Instruct patient on proper dressing procedure
- Assist patient into the room
- Give a basic explanation of procedure to be performed
- Identify and demonstrate landmarks used in centering patients for MRI scans
- Clean room and equipment properly
- Stock room up with supplies and linen
- Be knowledgeable of the CQI monitors being conducted

### **Nuclear Medicine (Elective)**

***All students must bring all current paperwork to the nuclear medicine supervisor on the FIRST day of the rotation.***

Upon completion of this rotation, the student must be able to:

- Practice appropriate radiation safety
- Stock room with linen and supplies
- Dress patient for procedure
- Properly explain the procedure to patient
- Identify the different radiopharmaceuticals; Explain the difference in their functions
- Differentiate cardiac studies and stress test
- Discuss ventilation perfusion studies
- Discuss general studies performed
- Identify the different cameras
- Explain the difference in their functions
- Be knowledgeable of the CQI monitors being conducted

### **Mammography (Elective)**

Upon completion of this rotation, the student must be able to:

- Clean the mammography unit.
- Clean the mammography IPs.
- Load and unload IPs in the CR reader.
- Assist and explain the daily quality control process.
- Assist patient with dressing for procedure.
- Assist patient with history/questionnaire.
- Identify the proper positioning projection.
- Identify normal breast anatomy.
- Identify the diagnostic procedures performed in mammography.
- Perform CC and MLO projections.
- Assist with needle localization

- Assist with stereotactic Biopsy
- Discuss galactography
- Track and charge for procedure in the RIS
- Be knowledgeable of the CQI monitors being conducted.

### **Informatics (Elective)**

Upon completion of this rotation, the student must be able to:

- Learn the components of a PC workstation
- Learn the standard radiology information system integration with the hospital information system
- Understand how Picture Archiving and Communications System (PACS) benefits the radiology department
- Learn the computer applications used in the Imaging Department
- Learn the importance of the Accession Number
- Learn how to look for incorrect or abnormal data in all radiology computer applications
- Understand the image workflow (Acquisition, Dictation, and Radiologists Signoff)
- Observe and assist in data correction (images and results)

### **Radiologic Science Education (Elective)**

Upon completion of this rotation, the student must be able to:

- Understand the process of curriculum design
- Explain the process of syllabus preparation
- Explain the process of lesson preparation
- Learn and understand the process of assessment and evaluation of educational outcomes
- Expand on professional development by observing the demands of an instructor and learn the practice of decision making in medical imaging education (Deliverables: Provide journal entries on decisions and results as well as reflection and comments on what I would do the same/different and expected outcomes of such a decision).

### **Biomedical Engineering (Elective)**

Upon completion of this rotation, the student must be able to:

- Identify the daily tasks of a biomedical engineer
- Identify the various medical equipment of the radiology department
- Assist in ensuring that all medical equipment is operating in a safe manner
- Recognize the testing tools used for medical equipment maintenance and repair
- Observe and assist in electrical safety checks of the medical equipment
- Assess asset tag expiration on various radiologic equipment
- Identify risk levels for medical equipment based upon manufacturer's recommendations and criteria
- Observe the removal of outdated or the installation new medical equipment in the radiology department \* (If applicable)