



**The Johns Hopkins Hospital
Schools of Medical Imaging
Radiography Program
2015-2017
Updated June 2016**

Sponsored by the Russell H. Morgan Department of Radiology and Radiologic Sciences
of
The Johns Hopkins Hospital

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Statement Regarding the Privacy Rights of Students

The Johns Hopkins Hospital Schools of Medical Imaging is prepared to comply with the provisions of the Families Educational Rights and Privacy Act of 1974 (Public Law 90-247, as amended) and any regulations that may be promulgated there under. Students and others who may wish specific information regarding the rights of access to institutional educational records maintained in their names are advised to contact the Program Director.

Notice of Nondiscriminatory Policy as to Students

The Johns Hopkins Hospital Schools of Medical Imaging do not discriminate against any person on the basis of race, color, national origin, age, sex, sexual orientation, gender identity, religion, disability, veteran status or any other basis protected by law with respect to any of the rights, privileges, program benefits and activities generally afforded or made available to students at the Schools of Medical Imaging.

Certified to be true and correct of content:

Sandra E. Moore

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April 1, 2015

History

The Johns Hopkins Medical Institutions were established through a gift of a Quaker merchant, Johns Hopkins, who wanted the Hospital and University built as a joint venture.

Johns Hopkins was born into a very poor family in southern Maryland in 1795. His first name was inherited from his great-great-grandfather, Richard Johns. Because of the family's financial troubles, he was forced to quit school at the age of 12. He went to work for his uncles and by the age of 19 he had established himself as a respected merchant.

Eventually he went into business for himself and built a fortune of 7 million dollars before he died in 1873 at the age of 78. Hopkins never married but gave much thought to what would happen to his estate. He left 3.5 million dollars to build a hospital, for he said "There will always be suffering." He also left 3.5 million dollars to build a joint university, "for there will always be youth." His concept of the Hospital and the University as a joint venture was a revolutionary idea at the time that set the standard for future medical education in the United States.

In his will he specified that the Hospital was "forever to serve the sick and ill of Baltimore without regard to race, age, sex or the ability to pay." Drs. Welch and Osler, two of the famous "Hopkins Four", brought other philosophies into the pattern of medical education in patient centered medical training and scientific research. Before the Hospital was established, physicians trained at medical schools without ever examining a real patient. The pattern established at The Johns Hopkins Hospital changed U.S. medical education forever by bringing medical students to the bedside of patients and placing the practice of medicine on a scientific basis.

The Johns Hopkins Hospital opened on May 7, 1898 followed four years later by The Johns Hopkins University along with the School of Medicine. The opening of the University and the School of Medicine ushered in a new era of medicine. Moving from laboratory to lecture hall to the patient's bedside, students and interns brought the scientific approach to medicine and received first-hand training in diagnosis and treatment. Within two decades, the Hospital and School of Medicine were models of medical care and education for the nation. That distinction has remained intact for over 100 years.

Johns Hopkins willed 13 acres of land in the city of Baltimore to erect the Hospital and wanted it to ultimately receive 400 patients. Today, The Johns Hopkins Medical Institutions covers a 44 acre area, has more than 1,000 beds, and is recognized as one of the world's leading medical institutions.

General Information

Radiography Program Mission Statement:

The mission of The Johns Hopkins Hospital Schools of Medical Imaging Radiography Program is to provide a comprehensive radiography program that will graduate competent entry-level radiographers for the healthcare community. The graduates will exemplify qualities of excellence in patient care, professionalism, radiation safety and ethical behavior thereby enhancing the healthcare experience of the patients they serve.

Radiography Program Goals and Student Learning Outcomes

Goal 1:

Students will demonstrate critical thinking skills in the classroom and clinical setting.

Student Learning Outcomes:

- Students will be able to formulate effective technical factors based on patient body habitus, trauma, pathology and physical and equipment limitations.
- Students will critically evaluate completed radiographs

Goal 2:

Students will demonstrate skill in written and oral expression

Student learning outcomes:

- Students will demonstrate written communication skills
- Students will demonstrate oral communication skills

Goal 3:

Students will demonstrate professionalism and summarize the value of life-long learning

Student learning outcomes:

- Students will model professional behavior in the clinical setting
- Students will demonstrate an understanding of the value of life-long learning

Goal 4:

Students will demonstrate competency in entry-level radiography skills

Student learning outcomes:

- The student will produce radiographs of diagnostic quality
- The student will develop an effective radiation protection practice for patients, self and staff
- The student will exhibit quality patient care

Program Effectiveness Data 2011- 2015

ARRT pass rate: 2011 - 2015

The Radiography program's 5 year average pass rate on the credentialing examination is 100% on the first attempt.

2011: 100% 15/15 students passed on the first attempt

2012: 100% 10/10 students passed on the first attempt

2013: 100% 8/8 students passed on the first attempt

2014: 100% 12/12 students passed on the first attempt

2015: 100% 7/7 students passed on the first attempt

Program Completion Rate 2015: 58.3% 12 students matriculated, 7 graduated

Job Placement Rate within 12 months of graduation. 2011 – 2015: 5 year average is 100%

2011: 100.0% 14/14 students

2012: 100.0% 10/10 students

2013: 100% 8/8 students

2014: 100% 11/11 students

2015: 100% 7/7 students

This information may also be viewed on the JRCERT website at www.jrcert.org

This information (program enrollment, completion rate, placement rate and pass rate for the ARRT examination) may also be viewed on the website of the Maryland Higher Education Commission at www.mhec.state.md.us

Overview of the Program

The Radiography Program is an 18 month (79 weeks) program. The program begins in June of each year and ends in December of the following year. Students will graduate with a certificate that allows them to sit for the national board examination given by the American Registry of Radiologic Technologists. The Radiography Program is part of the Schools of Medical Imaging which is administered under the direction the Russell H. Morgan Department of Radiology and Radiologic Sciences. The program faculty includes a full-time program director, as well as two full-time clinical coordinators. Clinical instructors are employed by the clinical sites. The professional and technical staff of the Department of Radiology of The Johns Hopkins Hospital and clinical affiliates also provide didactic and clinical instruction.

The didactic portion of the Program will be offered at the 8 Market Place, Suite 600, Baltimore, MD 21202. This location has three classrooms, a lounge area and kitchen space for students. There are also seven faculty offices and a computer lab. Classrooms are fully equipped with

anatomical models, computer projection system, white boards, overhead projectors, document projector and a print library. Students will have full digital access to the Welch Medical Library, one of the largest medical libraries in the world. The classroom space is easily accessible by car, bus or subway. Most of the academic classes will be held at this location, with some lectures offered at The Johns Hopkins Hospital.

The clinical training in the program will be completed at The Johns Hopkins Hospital and numerous other clinical facilities in the Baltimore metropolitan area. These facilities offer a wide variety of state-of-the-art imaging equipment. Clinical facilities (with mileage from the school in parentheses) The Johns Hopkins Hospital (1), The Johns Hopkins Outpatient Center (1), Johns Hopkins Bayview Medical Center (4), Johns Hopkins at White Marsh (18), Sinai Hospital (7), Northwest Hospital (19), and Advanced Radiology Imaging offices at Annapolis (26), Eldersburg (29), Timonium Crossing (14) and Westminster (28). Total capacity for the program is 46 students.

Completion of this Program and passing the ARRT credentialing examination allows the graduate to obtain employment in a wide variety of imaging locations to include hospitals and outpatient centers. A graduate of this program will have obtained training in general radiography, fluoroscopy, orthopedic, pediatrics, surgical and trauma radiography.

Accreditation and Approval

The Radiography Program is accredited by:

The Joint Review Committee on Education in Radiologic Technology
20 N. Wacker Drive, Suite 2850
Chicago, IL 60606-3182
312-704-5304

The Johns Hopkins Hospital Schools of Medical Imaging are approved by:

Maryland Higher Education Commission
6 North Liberty Street
Baltimore, MD 21201
410-767-3301

Students may contact Maryland Higher Education to access such information as the program enrollment, completion rate, placement rate and pass rate on the credentialing examination.

Administration and Faculty

Karen Horton, MD	Interim Radiology Department Chairman
Martin Bledsoe, MSPH,	Radiology Department Administrator
Peg Cooper, MBA, RT(R)	Radiology Department Administrator for Clinical Operations
Sandra E. Moore, MA, RT(R)(M)	Director, Schools of Medical Imaging

Radiography Program Faculty

John Eng, MD	Medical Advisor
Sandra E. Moore, MA, RT(R)(M)	Radiography Program Director
Allison E. Mason, BS, RT(R)	Radiography Clinical Coordinator
Stacey A. Bickling, BA, RT(R)	Radiography Clinical Coordinator

Student Instructor Ratio

Lecture:	22:1
Laboratory:	3:1
Clinical:	1:1

Academic Calendar 2015-2016

April 24, 2015	Pre-Orientation meeting for the Class of 2016
June 1 – July 4, 2015	Program Orientation for Radiography, Class of 2016
July 1 – July 31, 2015	Clinical Orientation
July 4, 2015	July 4 th Holiday, all students.
September 7, 2015	Labor Day Holiday, all students
October 1, 2015	2 nd tuition payment due, Class of 2016
November 26-27, 2015	Thanksgiving Holiday, all students
December 11, 2015	Graduation, Radiography Class of 2015
December 25, 2015	Christmas Holiday, all students
January 1, 2016	New Year's Holiday, all students
January 4, 2016	Second semester begins
January 18, 2016	Martin Luther King's Birthday Holiday, all students
February 1, 2016	3 rd tuition payment due, Class of 2016
March 28 – April 1, 2016	Spring Break
May 30, 2016	Memorial Day Holiday, all students
July 1, 2016	Third semester begins
July 1, 2016	4 th tuition Payment due Class of 2016
July 4, 2016	4 th of July Holiday, all students
September 5, 2016	Labor Day Holiday, all students
November 24-25, 2016	Thanksgiving Holiday, all students
December 9, 2016	Graduation, Radiography, Class of 2016

Academic Calendar 2016 -2017

April 22, 2016	Pre-Orientation meeting for the Class of 2017
June 6 – July 4, 2016	Program Orientation for Radiography, Class of 2017
July 1 – July 31, 2016	Clinical Orientation
July 4, 2016	July 4 th Holiday, all students.
September 5, 2016	Labor Day Holiday, all students
October 1, 2016	2 nd tuition payment due, Class of 2017
November 24-25, 2016	Thanksgiving Holiday, all students
December 9, 2016	Graduation, Radiography Class of 2016
December 25, 2016	Christmas Holiday, all students
January 1, 2017	New Year's Holiday, all students
January 4, 2017	Second semester begins
January 16, 2017	Martin Luther King's Birthday Holiday, all students
February 1, 2017	3 rd tuition payment due, Class of 2017
April 17 – April 21, 2017	Spring Break
May 29, 2017	Memorial Day Holiday, all students
July 1, 2017	Third semester begins

July 1, 2017	4 th tuition Payment due Class of 2017
July 4, 2017	4 th of July Holiday, all students
September 4, 2017	Labor Day Holiday, all students
November 23-24, 2017	Thanksgiving Holiday, all students
December 15, 2017	Graduation, Radiography, Class of 2017

Applications and Admission

For consideration into the Radiography Program, all applications and application fees must be **postmarked** by December 31st for the program that begins the following June. All supporting documents and transcripts must be **received** no later than January 15th of the matriculation year. Applications postmarked after December 31st or failure to supply supporting documents by January 15th, will only be considered on a space-available basis. It is the responsibility of the applicant to insure that all materials are received.

Complete applications include:

- Application fee of \$40.00
- Completed application form (see application section on the website)
- Two references: one from a current employer and one from a professor of math or science, completed on program forms. (see application section)
- Transcripts documenting **all** post high school education
- Signed certificate from the last slide on the Power Point® presentation about the Radiography program available on the website. The applicant must sign and return the certificate verifying that the applicant viewed the presentation.

Applicants must be 18 years of age by the start date of the program (June of each year). Applicants with foreign academic degrees are required to take the TOEFL iBT examination within one year of the application deadline. Foreign transcripts must be evaluated by one of the agencies in the United States that performs academic evaluations of all prerequisite coursework and other existing coursework. The overall score on the TOEFL iBT must be 80 or greater. The speaking portion of the examination must be 26 or greater.

Applicants who meet the qualifications specified for the Radiography Program (see prerequisite courses) will be required to participate in a personal interview. The candidate will be evaluated in a one-one interview by a panel. The candidate will be evaluated in the interview for appearance, behavior and demeanor, ability to answer questions, ability to speak/communicate and overall impression. At the time of the interview a basic computer skills assessment test will be administered. This will consist of a timed assessment of the applicant's ability to re-type a short Microsoft Word document and navigate the Internet for specified information. All of these items will be graded and entered as part of the final interview score. The candidate's GPA in the prerequisite courses, interview grade and computer test will be included, and candidates will be selected based on top scores

Note to all prospective students: *Criminal convictions may affect a student's ability to be credentialed or licensed.* If a prospective student has ever been charged with or convicted of a felony or misdemeanor, or has been subject to a disciplinary action (such as suspension or dismissal) from another Radiography program, the prospective student must contact the

American Registry of Radiologic Technologists for a Pre-Application Review of Eligibility (615-687-0048 x8580).

Acceptance decisions are based on the following:

- GPA in the prerequisite coursework, and in the event of a tie, GPA in all college-level coursework completed.
- Computer skills assessment.
- Interview scores.
- Successful completion of the background check.
- Successful completion of the hospital drug screening.
- Successful completion of any outstanding prerequisite coursework.

While acceptance decisions are not based on volunteer experience, the candidate is strongly encouraged to volunteer in a health care setting in order to solidify the student's desire to work in a health related profession.

In cases where applicants are equally qualified, the program admissions committee will make the final selection.

Prerequisite Coursework

All students who apply to the program must meet all physical and technical health capabilities standards (see below), be of high moral integrity, demonstrate responsibility and possess good interpersonal skills and compassion. All students must have reached the age of 18 by the day of matriculation.

Applicants are required to have taken the following academic prerequisites at an accredited academic institution, and must have completed the required prerequisite courses with a "C" or better. *The required prerequisite coursework GPA must average to 3.0 or better.* Students may apply with prerequisite coursework outstanding, but all coursework must be completed prior to the matriculation date. No more than two prerequisite courses may be outstanding at the time of the application.

Required prerequisite courses include the following;

- Human Anatomy and Physiology I and II, with laboratory.
- College Algebra
- English Composition
- The applicant must complete one of the following:
 - Public speaking
 - Interpersonal communication

Physical Health Examination

Before the date of matriculation, all students will receive a routine physical examination. Drug testing is performed as part of this physical. The Johns Hopkins Hospital and all clinical affiliates are drug-free environments and students will not be permitted to enroll if they fail the drug screening.

The routine physical examination, conducted by The Johns Hopkins Hospital Occupational Health, will require the student to show proof of immunity to childhood illness, such as measles, mumps, rubella and varicella. Students who fail to show immunity to these childhood diseases will be offered the vaccines, at a reduced fee, payable by the students. Students will also receive tuberculosis skin testing at the time of the physical.

Background Check

Consistent with The Johns Hopkins Hospital policy of requiring a criminal background check for all employees, this requirement is also extended to all students accepted by the Radiography Program. The background check will be initiated by the Hospital and will be conducted by PreCheck, Inc., at a cost of \$48.50 per student. This fee will become the responsibility of the student. An acceptable background screening will be required for all students beginning the Program.

Physical and Technical Requirements

The student will be expected to do the following:

- Push, pull and lift a minimum of 40 pounds
- Stand for long periods of time
- Push and maneuver wheelchairs, stretchers, x-ray tables, x-ray tubes and portable imaging equipment.
- Wear lead protective clothing for periods of 2-3 hours at a time.
- Be capable of fine motor control to handle equipment settings, computer use and injection syringes.
- Auditory capabilities to hear patient requests, monitoring devices and instructions from staff or physicians.
- Visual acuity to distinguish shades of grey, read patient monitoring devices and see small details on the radiographic image.
- Perform CPR.
- Performing twisting, lifting, pulling and carrying for purposes of moving equipment, transporting radiographic cassettes and moving patients.

Prospective students who have questions about performing any of the above activities should contact the Program Director.

Associates Degree Requirement January 1st, 2015

Effective January 1, 2015, the American Registry of Radiologic Technologists will require that all students must have a minimum of an associate degree in order to sit for the national board examination. (Please note that you must take and pass this examination in order to work as a technologist in the majority of locations in the United States). In order to meet this requirement, the Radiography Program must ensure the following, effective with the class that enters in **June 2014**:

1. The student must already have a minimum of an associate degree before the start of the program. The specific major is not specified, only that the prospective student have a degree. **OR**
2. The student may complete the required prerequisite courses and general education courses at a community college or four year college or university that has affiliated with the Radiography Program. The student will complete all required prerequisite courses at the affiliated community college or four year college or university and then apply to the program. Upon successful completion of the Radiography program, the affiliated institution has agreed to accept the Radiography Program credits toward the completion of the degree. Once the degree is granted, the student will be eligible to sit for the ARRT boards. At this writing the program has a formal academic affiliation with Harford Community College and Anne Arundel Community College in Maryland, Notre Dame of Maryland University in Baltimore, Immaculata University in Pennsylvania and Bloomsburg University in Pennsylvania. More affiliations contracts are in progress. The prospective student should check this page frequently for updates. Please contact the program director for clarification and questions.

Please note that as of June 2014, no student will be accepted into the program who has not completed all general education classes to obtain a degree upon completion of the program, or who has not already obtained a degree before the start of the program.

Degree Options

Notre Dame of Maryland University, located in Baltimore, MD, offers a program leading to a bachelors degree in Radiologic Sciences. Students will complete their prerequisite and general education coursework at NDMU, and then fulfill their degree requirements by completing an additional imaging specialty at The Johns Hopkins Hospital, or by completing a concentration in business administration at NDMU. For those students entering into the program effective June 2014, the student must complete all general education courses, prerequisite courses, and the academic concentration in business before being admitted to the Radiography Program.

Please contact the advising office of Notre Dame of Maryland University at 410-532-5500, or see the webpage at <http://www.ndm.edu> and look for the link to Adult Undergraduate Studies for further information.

Bloomsburg University located in Bloomsburg, Pennsylvania, offers a program leading to a bachelors degree in Medical Imaging. Students will complete their prerequisite and general education coursework at Bloomsburg, and then fulfill their degree requirements by completing an additional imaging specialty at The Johns Hopkins Hospital, or by completing a concentration in business or education. For those students entering into the program effective June 2014, the student must complete all general education courses, prerequisite courses, and the academic concentration in business or education before being admitted to the Radiography Program

Please contact the advising office at Bloomsburg University at 570-389-4130, or access the webpage at <http://www.bloomu.edu> for further information.

Immaculata University, located in Immaculata, Pennsylvania, offers a program leading to a bachelor of science in Allied Health. The students will complete general education and prerequisite course work at Immaculata University. Once these courses are completed, the

student may apply to the Radiography Program. If the student is accepted and completes the Radiography program, Immaculata will grant a Bachelor of Science degree.

Please contact the advising office of Immaculata University at 610-647-4400 or see the webpage at <http://www.immaculata.edu> for further information.

Harford Community College, located in Bel Air Maryland offers the opportunity for the prospective student to complete an associate degree in Technical and Professional Studies. The student must complete all program prerequisites and general education coursework, before being accepted into the Radiography Program.

For further information please contact the advising office at Harford Community College at 443-412-2000, or access the webpage at <http://www.harford.edu>

Anne Arundel Community College, located in Arnold, Maryland offers the opportunity for the prospective students to complete an associate degree in Radiologic Technology. The student must complete all program prerequisites and general education coursework, before being accepted into the Radiography Program.

For further information, please contact Anne Arundel Community College at 410-777-2222 or access the webpage at www.aacc.edu

Transfer Credit Policy

Transfer credit is not given for previous academic or clinical training in Radiography.

Tuition and Fees

Application fee:	\$40.00
Background Check:	\$48.50 (only for accepted students)
Tuition:	\$8,000.00
CPR Certification:	\$25.00: non-refundable once completed
Lab Fee:	\$150.00: non-refundable upon matriculation
Uniforms:	\$300.00: arrangements for refunds are made through the vendor
Books:	\$1,200.00: arrangements for refunds are made through the vendor
Total amount payable to the Radiography Program: \$8365.00. This is for the application fee, tuition, physical and drug screening, CPR certification and lab fee.	

Tuition is paid in 4 equal installments during the first 13 months of the program. Please note that all tuition and fees are subject to change.

Uniforms and books are purchased through the program vendors. All textbooks and uniforms specified by the program are required.

Payment of Tuition

It is the responsibility of the student to have tuition payments in the school office by the due date. Students whose tuition is in arrears will not be allowed to participate in the Program until tuition is up to date. The office does not send out invoices for tuition. The payment schedule for tuition is as follows:

Payment 1: Due June 1st, \$2,175.00 (\$2000.00 tuition, CPR and lab fee)

Payment 2: Due October 1st, \$2000.00

Payment 3: Due February 1st, \$2000.00

Payment 4: Due July 1st, \$2000.00

Financial Aid

The Schools of Medical Imaging is recognized as an eligible institution of higher education for purposes of state financial aid programs. These include Maryland State Scholarships and Veterans Benefits, but do not include Federal financial aid such as Pell Grants and Stafford loans. All financial arrangements should be resolved before attending the program. Students receiving scholarships may defer that part of their tuition that will be covered by the scholarships. The remaining amount must be paid by the due date. Students may also apply for loans through Sallie Mae. The student may pay for tuition payments by using a major credit card. Students may also wish to apply for a personal loan through their banking institution.

VA Approved Program

The Radiography Program is approved by the Maryland State Approving Agency to offer training to veterans and other eligible dependents under the VA educational benefit programs. The Radiography Program will obtain written records on a VA beneficiary's previous education and experience and complete an evaluation. The Radiography program generally does not grant credit for previous radiography training, and requests for such must be addressed to the program director.

The Program will notify the VA of any change in the enrollment status of students certified to receive Veterans educational benefits. This would include when the student is placed on attendance or academic probation, changes in scheduling or termination of training.

The Program will maintain grade records which are updated on a semester basis. VA students who are due a refund, will have the monies reimbursed within 40 days of the last day of attendance.

Refund Policy

All fees paid by a student shall be refunded if the student chooses not to enroll in or to withdraw from the school within 7 calendar days after having signed a contract. If, after the 7-day cancellation period expires, a student withdraws after instruction begins, refunds shall be based on the total contract price (assuming that the entire tuition was paid prior to the start of the program) for the course or program and shall include all fees, except registration and application and enrollment fees, any charges for materials, supplies, or books that have purchased from the hospital by, and are the property of, the student. If the student is on an official leave of absence, and fails to return to training by the end of the leave of absence, a refund due to a student shall be based on the date of withdrawal or termination and paid within 60 days of the scheduled last day of the leave of absence.

Uniforms, books, lab fees, application fees and CPR fees are not refundable.

Percentages of refunds are based on the academic/billing period completed by date of withdrawal.

Less than 10%	90% refund
10% up to but not including 20%	80% refund
20% up to but not including 30%	60% refund
30% up to but not including 40%	40% refund
40% up to 50%	20% refund
More than 50%	no refund

A refund due a student shall be based on the date of withdrawal or termination and paid within 60 days from the date of withdrawal or termination. In case of an official leave of absence, if a student fails to return to training by the end of the leave of absence, any refund will be based on the date of withdrawal or termination and paid within 60 days of the scheduled last day of the leave of absence. If the school closes or discontinues a course or program, the school will refund to each currently enrolled student monies paid by the student for tuition and fees.

The amount charged a recipient of VA educational funds for tuition, fees and other charges for a portion of the course will not exceed the approximate prorated portion of the total charges for tuition, fees, and other charges that the length of the completed portion of the program bears to the total length. The Program may retain \$10.00 for administrative costs.

Student Records and Transcripts

The Radiography Program maintains all grade records for students. Students who have graduated from the program may request a transcript for a fee of \$8.00. The request for a transcript must be made in writing, with the signature of the person requesting the transcript. Please send all transcript requests to The Johns Hopkins Hospital, Schools of Medical Imaging, Radiography Program, 8 Market Place, Suite 600, Baltimore, MD, 21202. The Radiography Program maintains grade records on all students that are updated every semester.

Health Insurance

Health insurance is required of all students while enrolled in the Program. Students may obtain their own health insurance or purchase it through the Program.

Graduation Requirements

To graduate, students must demonstrate satisfactory progress in class work (minimum grade average of 75%), clinical skill development (2.5 on a 4.0 scale) and required attendance. A student cannot miss more than 96 hours with 40 hours of additional emergency leave that must be made up. A student who misses more than 96 hours of leave, and 40 hours of emergency leave will be dismissed. Outstanding financial issues with the hospital, Program or credit union must be resolved before graduation.

Program Schedule

This program is a full-time, Monday through Friday, 40-hour per week program. There are no holidays, overnight or weekend rotations scheduled. Evening hours will be from 1:00 pm to 9:00 pm. Students will be scheduled for a total of 6-8 weeks on evening rotations, at intervals

throughout the second and third semesters. After normal hours rotations (from 7:00 pm to 9:00 pm) comprise approximately 0.5% of the total program hours.

In the first and second semester, students are scheduled in the classroom Tuesday and Friday mornings. The remainder of the week, the student will attend clinical. In the third semester, students will attend class all day on Thursday, and the remainder of the week will attend clinical.

Classroom hours are 8:00 am to 4:30 pm. Clinical times will vary depending on the clinical rotation to which the student is assigned. Start time may be as early as 7:30 am and as late as 1:00 pm. Students are generally assigned to a clinical location for 1 month at a time. Students are not assigned to clinical rotations based on proximity to home, and the student should be aware that personal transportation may be necessary to clinical sites.

Resources and Services

The enrolled student will have multiple resources and services available to them. These include:

- A wide variety of imaging suites and portable rotations to include general, fluoroscopy, surgical suites, emergency department, Level 1 trauma department, orthopedics and pediatrics.
- A wide variety of different types of imaging equipment.

Welch Medical Library

- The Welch Medical Library is one of the foremost medical libraries in the world. All students have the same access as any employee to all library services.

Computer labs

- A computer lab is available 24 hours a day at the Pre-Clinical Education building on the corner of Wolfe and Monuments streets. The lab is equipped with PCs and Macs. The computers have Internet access. Printers are also available for a fee. Access is gained to this lab by using the hospital ID badge.
- The Schools of Medical Imaging has a computer lab (9 stations) at the School. Students also have access to printers and a scanner.

The Denton Cooley Center

- Students in the program may elect to purchase full membership in this athletic facility. The Center is located directly behind Reed Hall adjacent to the Outpatient center and contains an indoor track, racquetball, basketball, and volleyball courts, saunas, showers and locker rooms.

Physical and Vaccinations

- The Johns Hopkins Hospital will provide to the student, a pre-matriculation physical to include a drug screening. The fee for this service is at a reduced cost of \$150.00. Hepatitis B and vaccinations for childhood diseases may be purchased through Occupational Health. Yearly influenza vaccinations are free and are mandatory.

Email Account

- The student will have a Microsoft Outlook email account for use while in the program.

CPR certification

- The student will be American Heart Healthcare Provider CPR certified at a cost of \$25.00. CPR training must be done at The Johns Hopkins Hospital.

Health Insurance

- The student may purchase health insurance through the hospital. Please inquire through Program Director for more information and fees. Health insurance is required for all students enrolled in the Program.

Mass Transit

- The student may purchase a discounted mass-transit pass that allows for unlimited access to bus, light rail and subway. The current cost is \$39.00 per month.

Personal Counseling

- The program director maintains a list of personal counseling services in the areas around Baltimore. The program does not recommend a particular service. It is the responsibility of the student to determine insurance acceptance.

Accommodations for Disabilities

- Students requesting accommodations for disabilities must report to Occupational Health. Occupational Health will determine if the student is eligible for services and the extent of accommodations available.

Parking

- Students may access both The Johns Hopkins Hospital and Market Place (classroom location) by public transportation. If the student chooses to drive to and park at either the hospital or classroom location, there will be a fee for parking (about \$7.00-\$8.00 per day), or the student may find free parking nearby. There is no fee for parking at any of the affiliate clinical locations.

Placement Services

- The program does not offer specific placement services. Any job possibilities that are made known to program faculty are passed along to students who are close to graduation.

Uniform Requirements

As a student in The Johns Hopkins Hospital Schools of Medical Imaging Programs, you are a representative of the hospital, the profession and of all health care providers. Your appearance is a reflection of your professionalism. Therefore, trendy modes of dress, hairstyle and general appearance that may be acceptable in a social setting are not appropriate for health care providers. The following guidelines for personal appearance are general guidelines. Program faculty reserves the right to demand that individual students make changes in their personal appearance to conform to professional standards.

- The Program in Radiography regulation uniform with the program emblem must be worn at all times. The uniform must be kept clean, pressed and in good condition. All leather

(athletic, nursing, Dansko) shoes must be *all black*. Shoes must be closed toe and heel, and no mesh shoes are allowed. Open heel clogs or canvas shoes are not permitted. Shoes must be kept clean and polished. Black socks are to be worn and must cover the ankle. A *hip length* lab coat may be worn over the uniform. No other uniform covering, such as sweaters, may be worn. Uniforms must be purchased from the program supplier.

- Hair that is shoulder length or longer must be kept tied back. Hair coloring is limited to natural human hair colors.
- Men must be clean-shaven every day. Beards or mustaches must be kept neatly trimmed.
- Jewelry and cosmetics must be kept to a minimum, with no loose or dangling jewelry. No visible pierced body adornments may be worn, except an earring worn in the ear. Hoop earrings must be no larger than dime-sized. No perfume or cologne may be worn.
- The uniform must include the black book, lead markers, a watch and a pen.
- Men and women are required to wear a round neck T-shirt or tank top that covers the chest under the scrub top. If the under-scrub shirt has sleeves, they may not show below the scrub top sleeves. The shirts may be white or black and have no markings. The shirt must be clean and in good condition. The faculty reserves the final right to approve any under-scrub shirt.
- Fingernails should be kept short and trimmed. Artificial nails may not be worn. No nail decals or chipped polish are permitted. These rules are not only program policy, but are Joint Commission policy as well. Colored nail polish must be discrete.
- Students may be required to cover visible tattoos while in clinic. This is at the sole discretion of the program faculty and policy at each clinical site.
- Students are expected to maintain meticulous standards of personal hygiene.
- Chewing gum is not permitted on the clinical floor.
- Students who do not meet the standards of appropriate dress or appearance as outlined above, or as judged by the program faculty, will be sent home to adjust their appearance. Time used by the student to return home to change and return to clinic will be removed from their bank of leave time
- Under no circumstances may students be in a clinical area in street clothes.
- Hospital scrubs are acceptable instead of the Program uniform ONLY in the surgical suites. Remember: the purpose of wearing scrub clothing is to keep the Clinical area clean. Therefore, street clothes should not be worn in these specific “clean” areas, nor should your scrubs be worn as street clothes. Scrubs are worn for the protection of the patient - NOT for your convenience in dressing or keeping your uniforms clean. Please note that visible T-shirts may not be worn under scrubs. Tank-type T-shirts may be worn as long as they are not visible. All OR scrub tops must be tucked in. **Under no circumstances may OR scrubs be worn outside the hospital.**
- Identification Badges: Identification badges must be worn at all program clinical sites. A charge of \$15.00 is made for lost I.D. badges. Identification badges will be surrendered upon graduation, termination or resignation from the program.
- Clinical sites may have additional uniform and appearance policies that must be followed.

There is a zero tolerance policy for uniform violations. Students violating uniform policies will be issued a citation immediately.

Absentee and Leave Policy

Policy summary: Students are expected to be in class or clinical assignment. Days missed beyond those allowed must be made up prior to graduation.

The student will be off on all scheduled hospital holidays. Those include:

- New Year's Day
- Martin Luther King Day
- Memorial Day
- July 4th
- Labor Day
- Thanksgiving and the day after
- Christmas Day

Students will have a one-week (40 hour) vacation scheduled for one week during the second semester. Please see the academic calendar in this catalog for exact dates.

In addition to the above named holidays, the student will be awarded a bank of 12 days (96 hours) to use for personal and sick time. The student may use this time at their discretion with the following stipulations:

- Once a student has exhausted his/her bank of leave hours, absences will be limited to illness, emergency or scheduled appointments, and all time must be made up. All emergency leave must include documentation of absence such as a health care provider's letter.
- Once the bank of leave time has been exhausted, the student will be permitted 40 hours of emergency leave. This time must be made up before the student receives a certificate of graduation or be allowed to sit for the ARRT boards. Make-up time must be approved by the clinical coordinator and a make-up time request form completed.
- If the student uses more than 40 hours of emergency leave the student will be dismissed from the program
- Absences due to personal illness of 3 days or longer will require a physician's note.
- Scheduled absences on class days are at the discretion of the instructor. A physician's note, in case of illness may be required for an unscheduled absence. It is the student's responsibility to contact the instructor directly and arrange for the possibility of make-up work. Exams, tests or quizzes are made up at the discretion of the instructor and will be administered on the first day the student returns to class. Should the student fail to contact the instructor in the event of a known absence, any quizzes or tests will not be made up.
- Time missed from classroom or clinic due to tardiness will be removed from the student's bank of time. This time will be removed in increments of 15 minutes.
- The faculty reserves the right at any time to ask for proof of a scheduled or unscheduled absence. This will include a health care provider's note, court document, towing or garage receipt, etc.
- Students who must miss class or clinic due to an unexpected illness or emergency must contact the clinical coordinator and the clinical instructor at the student's assigned

clinical site. If a student fails to contact the clinical coordinator and the clinical instructor within 30 minutes of the scheduled start time, the student will be issued a clinical warning (first offense only). Should the student fail to contact the appropriate clinical coordinator and the clinical instructor on a second occasion, the second offense will result in the student being placed on probation and will remain in effect throughout the remainder of the program. A third offense will result in dismissal. Students who leave a clinical site early without permission from the program director or the clinical coordinator will face the same consequences.

- Student attendance is calculated on an ongoing basis. There is no minimum or maximum time that may be used in each semester, but the student may not go over the amount of time allotted. The program does not have an attendance probationary period. The student may confer with their clinical coordinator at any point to determine the amount of time in their bank of leave hours.

Lateness or Absence

Students are expected to be present and on time for classroom lectures. This means the student is present and prepared for class to begin before the scheduled start time. The following policies will apply to all classes and to clinical lab.

One point will be removed from the student's final class grade for each late arrival to class both at the beginning of class and returning from the break. One point will be removed from the final class grade for each absence from class. Please note this policy also covers clinical labs.

In the event of lateness or absence from class, it is the prerogative of the instructor to allow the student to make up the quiz. Missed quizzes that are not made up will be entered as a zero for grading purposes.

In the event of lateness time will be removed from the student's bank of leave time in increments of 15 minutes.

Attendance Management

- Students are expected to exhibit the qualities of dependability and timeliness while on assignment in clinical rotations.
- An *unscheduled absence* is a failure to report for a scheduled shift or consecutive shifts, whatever the reason, including a medically verified illness. Each unscheduled absence counts as one occurrence. If an unscheduled absence due to illness occurs, and the student is out on consecutive clinical days, this counts as one occurrence. For example, if a student calls out sick on November 1st and remains out on November 2nd and November 3rd, this counts as one occurrence. If a student is out on November 1st, November 15th and November 20th, this is three occurrences. Absences covered under the LOA policy are not chargeable for disciplinary action purposes. Please note absences that are pre-approved by the program are not counted as an unscheduled absence.
- A *shortened work shift* means missing any part of a work shift due to lateness either at the beginning of the day or when returning from lunch or leaving early. Each incident will count as 1/2 of one occurrence. Please be aware that coming in late 30 minutes or more without prior notification or leaving early without prior notification will also be counted as an unscheduled absence.

Unscheduled Absences and/or Shortened Work Shifts During 18 Month Program	Disciplinary Action To Be Issued
3 occurrences	Counseling
6 occurrences	Written citation with grade implication
9 occurrences	Written warning with grade implication
11 occurrences	Written probation with grade implication
12 occurrences	Clinical dismissal

Leave of Absence

A Leave of Absence (LOA) may be granted due to illness or serious established need. The maximum LOA within the 18-month Program may not exceed 60 calendar days. The student must submit a written request for consideration of approval of a leave of absence to the Director. Final approval of the request rests with the Director. A student returning from LOA due to illness must have physician clearance before re-entering the program and will be expected to resume normal duties and clinical rotations. Student's clinical skills will also be reassessed upon return from LOA, and additional time may be needed to re-establish clinical competency levels. Time lost due to LOA must be made up before the student will be eligible to graduate from the Program in Radiography and before the student is eligible take the ARRT examination.

Pregnancy Policy

The following policy is based on the Nuclear Regulatory Commission's Regulatory Guide 8.13. A complete copy of this guide is available in the program offices.

If, during the course of her clinical training, a student becomes pregnant, she is strongly encouraged to declare this pregnancy to the program director. Revealing a pregnancy is not required, but is the decision of the student and her physician. Only by revealing a pregnancy is the student subject to the lower dose limit of 0.5 rems.

The student who chooses to reveal her pregnancy to the program director will:

- Submit a formal statement in writing to the program director. A sample letter is available in the program offices.
- Receive counseling on radiation safety practices to be observed during the course of her pregnancy from the program director, the chief physicist, or the radiation safety officer.
- Receive a fetal radiation monitor which is to be worn at waist level, and when applicable, *under* the lead apron.
- Be subjected to the lower radiation dose of 0.5 rems for the duration of her pregnancy (as opposed to the normal occupation limits of 5 rems per year). This limited radiation dose will begin when the pregnancy is declared.

The student must be aware of the following:

- Only declared pregnancies are subject to the lower dose limit.
- The program will assume that a pregnancy does not exist unless the program director is informed of the pregnancy in writing.
- If a student has declared a pregnancy, the student has the right to withdraw the declaration of pregnancy at any point in time. A withdrawal of declaration of pregnancy must also be in writing.

Pregnant students have several options regarding the Program in Radiography. Once the pregnancy is declared, the program faculty will discuss the following options with the student.

The options are as follows:

1. The student may continue both academic and clinical components of the program with no interruption.
2. The student may continue academic course work only. Students seeking this option must have a written communication from their health care provider stating that this is necessary for the safety of the pregnancy. This option is at the discretion of the program director, and will depend on the student's place in the program. Students who select this option with the program director's approval will make up all clinical training prior to graduation and receiving a certificate of program completion.
3. Leave the program, and re-enter the program at an appropriate time to be determined by the program director. The student may be required to begin the program again depending on the student's place in the program at the time of withdrawal. The maximum leave of absence within an 18-month period is 60 days.

Students who select options 2 or 3 may only re-enter the program if student enrollment does not exceed JRCERT mandated capacity, or if a waiver is obtained for student capacity.

Regardless of which option is chosen, the student must complete all academic and clinical requirements in a satisfactory manner prior to receiving a certificate from The Johns Hopkins Hospital Schools of Medical Imaging. The student should be aware that this might entail additional clinical training if the absence from clinical training has been substantial, or if clinical skills need further enhancement.

Inclement Weather Policy

In the event of inclement weather, the Schools of Medical Imaging will remain open. If the student is unable to attend due to inclement weather, the student must use time from their bank of hours. In the event that classes are cancelled, the student is expected to report to their clinical assignment, or use time from their bank of hours. Notice of cancellation of classes will be made on the program director's voice mail.

The exception to this is if the governor of Maryland declares a state of emergency. If this occurs, classes and clinical are canceled with no effect on leave time or occurrences.

Disciplinary Policies

The JHH Schools of Medical Imaging has developed a disciplinary action policy to inform students of undesirable behavior and allow students to correct such behavior and bring performance to an acceptable level. The student may be given, in order of severity, counseling, written citation, written warning, probation and dismissal.

Depending on the nature of the infraction, breach of a disciplinary policy may result in probation and ultimately dismissal from the program if the problem is not resolved. *However, breach of a critical or a major disciplinary policy may result in immediate dismissal without the benefit of a written probation. This will occur in an instance where patient safety or ethical issues are involved or radiation safety is compromised.*

Documentation will be retained in the student's file at every level of the disciplinary process. It is the prerogative of the program faculty to identify and to determine the appropriate level of the disciplinary process depending on the nature of the infraction.

Dismissal

A student may be dismissed from the Program at any time during the program. A student who is being dismissed from the program has generally been issued a written probation. If the stipulations of the written probation have not been accomplished, the student will be dismissed from the program. Clinical dismissal from the program is permanent, and does not allow for reapplication to the program. Academic dismissal does allow the student to reapply to the program and may require the applicant to take additional classes at the direction of the Program Director. Instances involving patient safety, ethical issues, radiation safety, violations of HIPAA policies or breach of a critical program disciplinary policy may result in immediate dismissal with no written probation. A student who is being dismissed will receive a written notice and conference with the Program faculty.

Reasons for dismissal may include but are not limited to:

- The student's clinical or academic records are unsatisfactory.
- The student is absent for three consecutive days without prior notification of the school office.
- The student has incurred three unscheduled absences without notifying the program faculty and/or the clinical instructor.
- The student has committed a breach of a major or critical rule or regulation of the Hospital, Department of Radiology, or Schools of Medical Imaging.
- The student has failed to comply with a previous probation, or has incurred a second probation for a different reason.
- The student displays an antagonistic disposition or any other undesirable trait, making them unsuitable for the field of medical imaging.
- Failure to adapt to any program requirements.

- Reporting to the Program while under the influence of any intoxicant, hallucinogenic or narcotic or where the presence of any such agent can be established by a “for cause” drug test under the substance abuse policy.
- Unauthorized possession or use of an intoxicant, hallucinogenic or narcotic while on the premises.
- Failure to submit to an alcohol or drug screening.
- Unauthorized possession of a deadly weapon on the premises.
- Fighting, issuing threats or verbal abuse or other disorderly conduct on the premises, or while otherwise engaged in Hopkins or affiliate site’s business.
- Absence from the Program for three consecutive, scheduled days without notifying the Program faculty of a satisfactory reason, such as illness or accident (as verified by written certification by a medical doctor, if requested by the Program faculty). This type of absence constitutes Program abandonment.
- Exposing an OSL badge on purpose.
- Taking photographs or recording patient information or images by any other means.
- Failure of three clinical rotations.

Grievance Policy

All students have the right to appeal administrative decisions made by faculty and staff of the Schools of Medical Imaging. The student must follow the levels as listed below, in the order that they are listed. Any attempt to bypass a level of the process, will result in termination of the appeal process. *Before the grievance policy may be initiated at Level One, the student is required to meet with the other party in an attempt to rectify the situation.* If the perceived grievance is not rectified through a meeting, the formal process of appeal, as detailed below, includes three levels.

Level One:

A written statement is delivered to the Program Director of Radiography within three (3) working days of the perceived incident. Said statement must fully describe the circumstances giving rise to the perceived grievance and a description of the efforts made to resolve the grievance. A decision regarding this appeal will be made within three (3) working days of receiving the appeal, exclusive of weekends, holidays, scheduled absences or sick days.

Level Two:

If the student desires to appeal the decision made at Level One, the student must provide a written statement to the Director, Schools of Medical Imaging within three (3) working days of the decision at Level One. Said statement must fully describe the circumstances giving rise to the perceived grievance and a description of the efforts made to resolve the grievance at the previous level. A decision regarding this appeal will be made within three (3) working days of receiving the appeal, exclusive of weekends, holidays, scheduled absences or sick days.

Level Three:

If the student desires to appeal the decision made at Level 2, the student must present the perceived grievance within 3 working days of the decision to such persons recommended by the Schools of Medical Imaging.

These persons (a 3 member panel) have been appointed by the Radiography Program to arbitrate such matters and are of the members of The Johns Hopkins Medical Institutions. These persons are not members of the Radiography Program or the Radiology Department.

The student must present a written statement first to the chairperson (whose name will be provided by the program director) who will initiate contact with the other members of the Appeals Board. This statement must fully describe the circumstances giving rise to the perceived grievance and a description of the efforts made to resolve the grievance at the previous levels.

These persons responsible for hearing the grievance will discuss the grievance with all interested parties and make a decision as to whether the previous decisions stand or will be revised. All parties have the right to a face-to-face meeting or teleconference. Every effort will be made to resolve this issue within 2 weeks.

Once the student has proceeded through all three levels of the grievance policy, the student has the right to appeal to the Secretary of Higher Education at the Maryland Higher Education Commission, the Joint Review Committee on Education in Radiologic Technology Maryland Board of Physicians (the state licensing agency) and the Maryland State Consumer Protection Office Those addresses are listed below.

JRCERT Appeals Process

If the student believes that a violation of the JRCERT standards has occurred, the student should first follow the steps of the program's appeals process. If the student believes that a violation still exists after following all the steps of appeals process, the student should contact the JRCERT directly at:

The Joint Review Committee on Education in Radiologic Technology
20 N. Wacker Drive, Suite 2850
Chicago, IL 60606-3182
312-704-5300
www.jrcert.org
Reference Program #25450000

Once the complaint has been filed, and the program has been contacted by the JRCERT, the program will:

1. Inform the Advisory Board, Director of the Medical Imaging Schools, and Radiology Administration that a formal complaint was filed with the JRCERT.
2. Review the complaint with program faculty and the Director of the Medical Imaging Schools, and offer complete written explanation to above named parties, and the JRCERT as to the events that have occurred. All previous attempts at solving the problem will be outlined. The response will be issued within 10 days of receipt of the complaint.
3. Based on this explanation, the JRCERT will decide whether or not the program is in compliance with the Standards.
4. If the JRCERT believes that the program is not in compliance with the Standards after written explanation, the program will comply with directives issued by the JRCERT to bring the program into compliance. Members of the program's advisory board will meet

to develop a plan of action for resolution of the decree of non-compliance. All means of complying with directives will be forwarded to the JRCERT within 21 days of the directive.

The person(s) who has issued the complaint will be informed of the progress toward resolving the issue.

Maryland Higher Education Appeals Process

The student has the right to appeal in writing to the Secretary of Higher Education at the Maryland Higher Education Commission concerning possible school violations of Maryland regulations.

Maryland Higher Education Commission
6 North Liberty Street
Baltimore, MD 21201
410-767-3301

The student also has the right to contact:

Maryland Board of Physicians

4201 Patterson Avenue
Baltimore, MD 21215
400-764-4777

Maryland State Consumer Protection Agency

200 St. Paul Street
Baltimore, MD 21202
410-576-6372

Grading Policies

Didactic (Classroom) Grading Standards:

- Passing grade, "C", for all courses is 75%.
- Students will be issued a written notice of academic probation if, at mid course, the student's average is below 75%.
- Failure of any course will result in academic dismissal.

Grading Scale for Academic Courses

% score	4.0 scale	Letter Grade
92 - 100	3.35 - 4.00	A
84 - 91	2.70 - 3.30	B
75 - 83	2.00 - 2.65	C (minimum passing grade)
Below 75.0	< 1.00	F

Clinical Grading Standards:

- Passing grade for all clinical testing and evaluations is 2.5 on a 4-point scale.
- A clinical average of 2.5 is required at the end of each semester in each of the three clinical components to continue in the program.
- The overall average of the three clinical components, minus any warning or probation penalties must be 2.5 or greater to continue in the program.

Academic and clinical grades, along with attendance will be calculated at the end of each semester and the end of the program, and entered into the student's permanent record. At the

mid-point of each academic class, or at the mid-point of the clinical semester, students who have not attained the minimum prescribed passing grade will be placed on probation. This probation will remain in effect until the end of the academic class, or the clinical semester. A student who is placed on probation for attendance issues, or a student who is placed on clinical probation for serious issues such as patient care, radiation safety or ethical issues will be placed on probation for the remainder of the program. Students who fail to achieve the minimum passing grade for any academic class or clinical semester, or who fail to comply with the conditions of a clinical probation will be dismissed from the program. Student grades will be recorded each semester and given to the student. Make-up work is at the discretion of the instructor.

Students who have been dismissed from the Radiography Program for unsatisfactory academic grades may reapply to the program. No credit will be given for advanced standing should the student be readmitted. Students who are dismissed clinically may not apply for readmission.

Academic Integrity Policy

Students in The Johns Hopkins Hospital, Schools of Medical Imaging are expected to exhibit the highest standards of academic integrity at all times. This includes but may not be limited to:

- Cheating: the deliberate use of unauthorized materials or information in the performance of any academic exercise. This would also include falsification of any records, documents or information.
- Assisting another student in academic dishonesty: deliberately assisting another student in the use of unauthorized materials or information.
- Plagiarism: intentionally adopting the words or ideas of another person without giving that person due credit for such words or ideas.

Adherence to the Academic Integrity Policy is expected and required. Violations of this policy are viewed as a serious offense because it diminishes the quality of scholarship and misrepresents professional knowledge and integrity. Penalties for violations of the above policy will result in dismissal from the Program.

Radiography Program Course Hours:

Curriculum Outline	Lecture Hours	Lab Hours	Clinical Hours
Rad 101: Orientation and Introduction to Radiography	93	24	48
Rad 102: Radiographic Procedures I	50	12	
Rad 103: Medical Ethics and Law for the Imaging Professional	24		
Rad 104: Radiation Biology and Protection	32		
Rad 105: Image Acquisition and Evaluation I	24		
Rad 106: Patient Care and Pharmacology	28	8	
Rad 107: Osteology	28		
Rad 108: Medical Terminology	30		
Rad 110: Clinical Practicum I			735
Rad 202: Radiographic Procedures II	40	12	

Rad 203: Introduction to Radiographic Pathology	32		
Rad 204: Equipment Operation	30		
Rad 205: Image Acquisition Evaluation II	28	4	
Rad 206: Venipuncture Training	8	8	
Rad 220: Clinical Practicum II			852
Rad 302: Imaging Modalities and Radiation Therapy	18		
Rad 303: Comprehensive Registry Review	40		
Rad 304: Equipment Operation and Quality Control	34		
Rad 305: Advanced Topics in Radiography	28		
Rad 330: Clinical Practicum III			776
	537	68	2,363
Total Program Instructional Hours: 2,968			

Course Descriptions

First Semester Courses June - December

RAD 101 Orientation and Introduction to Radiography

This course is designed to provide the student with an overview of radiography, and its role in the health care delivery system. Policies and procedures of the program will be covered. The organization of the hospital and the radiology department will be explained. The student will be oriented to the profession of radiography in relation to various accreditation and credentialing agencies. An overview of other allied health care professions will be covered. Professional opportunities for growth and development will be discussed. Lecture content will also include training related to cultural competencies and critical thinking. Clinical orientation will cover basic operation of the x-ray unit, image processing and radiation protection. Terms and concepts that are basic to radiographic procedures will be introduced. Attendance at a hospital employee orientation session will train the student in handling blood and bodily fluid borne pathogens, harassment, chemical and fire safety. The student will receive training for CPR certification. Coursework will be assigned in the JHH online learning system. The student will be expected to pass both clinical and classroom competency evaluations related to this course

Contact hours:	90 Lecture, 24 Clinical Lab
Textbooks:	Bontrager, K., Textbook of Radiographic Positioning and Related Anatomy, 8 th ed
Instructor	Sandra Moore, MA, RT(R)(M) Allison Mason, BS, RT(R) Stacey Bickling, BA, RT(R)
Prerequisites:	None

Successful completion of this pre-clinical course is a pre-requisite for continuing in the radiography program.

RAD 102 Radiographic Procedures I

This course, the first of a two-semester sequence, provides detailed instruction in the fundamental principles of positioning for all routine radiographic procedures. It includes relevant topographic anatomy and cross sectional anatomy instruction. Also included in this course is an instruction in procedures that are unique to pediatrics, geriatrics, mobile radiography, trauma and operating room. This course integrates with the Clinical Competency Program. This course is divided into categories with each category having its own laboratory component. The categories are chest, abdomen, extremities, pelvis, and bony thorax. Critical evaluation of images is also included in this course.

Contact Hours: 50 Lecture, 12 Lab
Lab component: Yes
Textbook: Bontrager, Textbook of Radiographic Positioning and Related Anatomy, 8th ed
Instructor: Stacey Bickling, BA, RT(R)

RAD 103 Medical Ethics and Law for the Imaging Professional

The purpose of this course is to give the medical imaging student a basic background in ethics, medical-legal issues and ethical decision-making. The field of medical imaging is one where students will be called upon to make decisions that will involve personal and professional ethics and values. This course will be taught as a combination of lecture and class discussion. Student contribution to class discussion is important to this course.

Contact Hours: 24
Textbook: Torres', Patient Care in Imaging Technology, 8th ed
Skloot, The Immortal Life of Henrietta Lacks
Instructor: Sandra Moore, MA RT(R)(M)

RAD 104 Radiation Biology and Radiation Protection

This course is designed to acquaint the student with the effects of ionizing radiation on the human body, and optimizing radiation protection for patients, self and other health care providers. The first half of the course will focus on Radiation Biology and covers such concepts as ALARA, ionizing radiation interaction with matter, and early and late effects of ionizing radiation. The second half of the course will focus on means of minimizing radiation exposure to both patients, imaging technologists and other health care workers. Also covered are regulations related to radiation exposure and x-ray equipment

Contact Hours: 32
Textbook: Bushong, Radiographic Sciences for Technologists
Statkiewicz & Ritenour, Radiation Protection for Student Radiographers

Instructor: Sandra Moore, MA RT(R)(M)

RAD 105 Image Acquisition and Evaluation I

This course, the first in a two semester sequence, will provide students with the principles of image creation in a chronological order. The student will learn about latent image production, film-screen imaging, film processing and film artifacts. Digital imaging will be covered in depth. Processing techniques for digital imaging will also be discussed. Information about RIS, DICOM and PACS will be covered in this course. The student will begin to critically evaluate images and propose solutions for discrepancies noted in images.

Contact Hours: 24
Textbooks: Fauber, Radiographic Imaging and Exposure, 4th edition
Instructors: Alfred Traylor, MA, RT(R)(CT)(MR)

RAD 106 Patient Care and Pharmacology

This course will provide a basic understanding of skills needed to allow the student to work comfortably and safely with patients. Some of the areas covered will include basic nursing care, proper body mechanics, aseptic technique, communication, age specific criteria and patient monitoring to include vital signs and medical emergencies. Pharmacology and the use of radiographic contrast, including risk factors and reactions, will be taught. Students will learn to critically evaluate patients and examinations to determine possible risks to the patient or staff. The course will also include a clinical component under the supervision of a radiology nurse.

Contact Hours: 28 Lecture, 8 Clinical Lab
Textbook: Torres, Patient Care in Imaging Technology, 8th edition
Instructor: Allison Mason, BS, RT(R)

RAD 107 Osteology

This course will provide detailed content in the subject of human osteology. Information will cover the structure and function of bone tissue. Students will learn to identify bones using various instructional means such as dry specimens, drawings and radiographs. Emphasis will be placed throughout the course on arthrology of various joints. This course integrates with Radiographic Positioning and the Clinical Competency Program to prepare the student to identify various bony anatomy on radiographs.

Contact Hours: 28
Textbook: Bontrager, Textbook of Radiographic Positioning and Related Anatomy, 8th ed
Instructor: Stacey Bickling, BA, RT(R)

RAD 108 Medical Terminology

This course will provide the student with a sound background in the language of the medical profession. The content will be based on word-building skills that begin with a study of prefixes, suffixes and root words. Specific terminology related to radiology will be discussed.

Also included in this course will be abbreviations and symbols. An ability to break down and analyze words, correct spelling and pronunciation will be emphasized.

Contact Hours: 30
Textbook: Brooks, Exploring Medical Language, 9th ed
Instructor: Stacey Bickling, BA, RT(R)

RAD 110 Clinical Practicum I

Contact Hours: 735

This clinical course will introduce the radiography student to the day-to-day operations of clinical practice. The first part of the course will be spent introducing the student to the clinical area and assisting the technologist. Students may then begin performing radiographic procedures on patients under the direct supervision of a qualified technologist. Latter portions of the course will allow the students to begin documenting and testing on procedures that have been presented in the Radiographic Procedures I, once clinical laboratory and classroom testing have been completed.

Second Semester Courses: January – June

RAD 202 Radiographic Procedures II

This course will continue to provide students with detailed instruction on increasingly difficult radiographic examinations to include; spine, headwork, contrast imaging, genito-urinary studies, venography, arteriography, arthrography, myelography and hysterosalpinography. It includes relevant topographic anatomy and cross sectional anatomy instruction. Continued emphasis will be placed on critical evaluation of images and problem solving skills in relation to producing diagnostic radiographs. This course integrates with the Clinical Competency Program. This course is divided into categories, each having its own laboratory component. Critical evaluation of images is also included in this course.

Contact Hours: 40 Lecture, 12 Lab
Lab component: Yes
Textbook: Bontrager, Textbook of Radiographic Positioning and Related Anatomy, 8th ed
Instructor: Stacey Bickling, BA, RT(R)

RAD 203 Introduction to Radiographic Pathology

This course is designed to enable the second year radiography student to integrate information learned from courses in radiographic positioning and anatomy into pathological processes diagnosed from radiographs. Commonly seen pathologies will be discussed and their radiographic appearance demonstrated. Included in this course will be the formal presentation of a paper that has been independently researched by the student.

Contact Hours: 32
Textbook: Eisenburg, R., Comprehensive Radiographic Pathology, 5th ed.
Instructor: Allison Mason, BS, RT(R)

RAD 204 Equipment Operation

In this course, the radiography student will be introduced to the fundamental principles of ionizing radiation and the operation of the x-ray unit. Topics in this course will include the discovery of x-radiation, x-ray properties, electricity, magnetism, electromagnetic radiation and the x-ray tube and generating system.

Contact Hours: 30
Textbooks: Bushong, Radiologic Science for Technologists, 10th ed.
Instructors: Sandra Moore, MA RT(R)(M)

RAD 205 Image Acquisition and Evaluation II

This course allows the student to develop working knowledge of the theory and principles of radiographic exposure. The four primary image quality factors of detail, distortion, density and contrast will be covered. Controlling and influencing factors which affect radiographic quality are emphasized. Critical thinking and problem solving skills will be emphasized as the student learns to manipulate various controlling and influencing factors of radiographic quality to produce the optimal radiograph.

Contact Hours: 28 Lecture, 4 lab
Textbook: Fauber, Radiographic Imaging and Technology, 4th ed
Instructor: Sandra Moore, MA, RT(R)(M)

RAD 206 Venipuncture

This non-graded course will be successfully completed when the student is certified in venipuncture by the Radiology Department. The student will participate in a series of classroom demonstrations and practice. The student will complete a self-learning packet of materials required by the Radiology Department for all technologists, nurses, and students who wish to practice venipuncture in the department. The student will prove competency by passing a clinical practicum with a radiology nurse.

Contact Hours: 8 classroom, 8 laboratory
Text Book: Ballinger, P., Merrill's Atlas of Radiographic Procedures
Lab Component: As assigned by instructor
Instructor: Sandra Moore, MA, RT(R)(M)
Stacey Bickling, BA, RT(R)

RAD 220 Clinical Practicum II

Contact Hours: 852

This clinical course will allow the student to perform radiographic examinations under the supervision of a qualified radiographer. The students will continue documenting and testing on studies that have been presented in Radiographic Procedures II, once clinical laboratory and classroom testing has been completed. Emphasis will be placed on continued improvement of imaging skills and speed in performing examinations.

Third Semester Courses: July - December

RAD 302 Imaging Modalities and Radiation Therapy

This course provides an overview of alternate imaging modalities including: Cardiovascular – Interventional Imaging, Neuro-Interventional, Computed Tomography, Nuclear Medicine Technology, DEXA, Diagnostic Medical Sonography, Mammography and Magnetic Resonance Imaging. Also included is a lecture in Radiation Therapy. Included in the discussions of these alternate imaging modalities will include necessary requirements to become certified in these areas

Contact Hours: 18
Text Book: Bontrager, Textbook of Radiographic Positioning and Related Anatomy, 8th ed.
Instructors: Specialty Area Staff

RAD 303 Comprehensive Review

This non-graded course is intended to prepare the student for the ARRT Registry Exam in Radiography. The five content areas correspond to those content areas of the exam. Students take practice exams throughout the course

Contact Hours: 40
Textbook: Saia, D. Prep Radiography Examination, 8th ed.
Instructors: Sandra Moore, MA RT (R)(M)
Allison Mason, BS, RT(R)
Stacey Bickling, BA, RT(R)(M)

RAD 304 Equipment Operation and Quality Control

The course will include content about x-ray production, the x-ray emission spectrum, analog and digital fluoroscopy, specialized equipment that uses x-radiation such as conventional tomography, mammography and CT. The last portion of the course will focus on various quality control procedures in the Radiography department

Contact Hours: 34
Textbooks: Bushong, Radiologic Science for Technologists, 10th ed
Instructors: Sandra Moore, MA RT(R)(M)

RAD 305 Advanced Topics in Radiography

This course is designed for extensive group and individual participation in the critical evaluation of radiographs, typical and atypical radiographs, procedures and imaging the non-conforming patient. The student is guided by the instructor in using critical thinking skills to identify problems in regard to diagnostic quality of the radiograph. Anatomical structures, associated pathology, positioning, processing problems and pertinent patient clinical data are discussed. This course will also include critical evaluation of journal and internet articles relevant to radiology. The student will create a clinical portfolio during this course.

Contact Hours:	28
Textbook:	Martensen, Radiographic Image Analysis, 4th ed.
Instructor:	Sandra Moore, MA, RT(R)(M) Stacey Bickling, BA, RT(R)

RAD 330 Clinical Practicum III

Contact Hours: 776

This clinical course will allow the student to perform radiographic examinations under the supervision of a qualified radiographer. The students will continue documenting and testing on studies that have been presented in Radiographic Procedures I and II. Emphasis will be placed on continued improvement of imaging skills and speed in performing examinations. During this clinical course, the student will be expected to complete all outstanding clinical competency testing, and complete three Global (terminal) competencies in the areas of Orthopedics, Emergency Department and General/Fluoroscopy.