



NEW YORK SCHOOL OF CAREER & APPLIED STUDIES

A DIVISION OF TOURO COLLEGE

Where Knowledge and Values Meet

MEDICAL IMAGING PROGRAM

PROGRAM CATALOG

Touro College

**31st Street Campus
320 West 31st Street
New York, NY 10001**

Harlem Hospital

**506 Lenox Avenue
Kountz Pavilion 415
New York, NY 10037**



Important Notice

This Catalog contains only general guidelines and information. It is not intended to be comprehensive or to address all the possible applications of, or exceptions to, the policies and procedures of Touro. Some of the subjects described in this Catalog are covered in detail in official policy and procedure documents found online and elsewhere. You should refer to these documents for specific information, since this Catalog only briefly summarizes those policies. For that reason, if you have any questions concerning a particular policy or procedure, you should address your specific questions to the Office of Institutional Compliance. Please note that the terms of the full official policies are controlling in the case of any inconsistency.

This Catalog is neither written nor meant to confer any rights or privileges on students or impose any obligations on Touro. No individual or representative of Touro (except the President) has the authority to enter into any agreement or understanding contrary to the above.

This Catalog is written for informational purposes only and may contain errors. The policies, procedures and practices described herein may be modified, supplemented or discontinued in whole or in part, at any time with or without notice. All changes will be posted on the Touro website. Although we will attempt to inform you of any changes as they occur via the Touro email address assigned to you upon activating your TouroOne portal account, it is nevertheless your responsibility to keep current on all College policies, procedures and practices. Your assigned Touro email address is the official method of contact for all such notices and for all Touro communication.

Students are required to investigate for themselves as to whether the program they enroll in meets their personal, educational and career needs. Different jurisdictions have different licensing requirements and standards. While students may expend significant sums associated with higher education, successful completion of a course, program, or degree is dependent on many factors. The payment of tuition permits a student to register and take the courses and programs available and offered by the Touro school or program in which the student is enrolled. Tuition and fees may be modified from time to time in the sole discretion of Touro. Acceptance in a school or program does not form the basis of a contract. Indeed, a student's acceptance may be revoked if it is later learned, among other things that his or her qualifications have been misstated or overstated, there is some other omission or misrepresentation in their application, or if the student has exhibited any prior conduct that may be inconsistent with the mission or values of Touro. Except as noted in the paragraph below, no contract rights exist or are established in the student-educational institution setting by and between Touro and the student. To this end, you waive and Touro disclaims any contract or liability for promises, assurances, representations, warranties, or other statements made in its marketing or promotional materials, and makes absolutely no promises, assurances, representations, guarantees, warranties or other statements concerning our courses and programs and a student's academic success in them. Thus, you waive and Touro



further disclaims any liability in tort in connection with any of the foregoing. In order for a degree to be earned, the required grades and grade point averages must be achieved and maintained, and all other requirements of the school and program must be fulfilled. These disclaimers are, in effect, covenants not to sue binding on students, and are tacitly agreed to by a student's matriculation or continued matriculation in our programs.

Registration and matriculation at Touro after the issuance of this Catalog is consideration for and constitutes a student's knowing acceptance of the binding Alternative Dispute Resolution ("ADR") mechanisms contained herein. Thus, any dispute, claim or controversy arising out of or related to your application, registration, matriculation, graduation or other separation from Touro and/or this Handbook, which is not resolved through Touro's internal mechanism shall be submitted to non-binding mediation with a neutral mediator affiliated with an established and reputable organization engaged in alternative dispute resolution ("ADR Organization"). In accordance with the Federal Arbitration Act and to the extent not inconsistent with the primacy of federal law, all Disputes remaining after completion of the mediation shall be exclusively conducted and heard by an ADR Organization, designated by Touro in its sole and absolute discretion, before a single arbitrator who shall be an attorney. The location of the arbitration shall be at a convenient office on a Touro campus where the student is (or was last) affiliated. See "Alternative Dispute Resolution" provision for a more elaborate treatment.

Policy of Non-Discrimination

Touro College treats all employees, students, and applicants without unlawful consideration or discrimination as to race, ethnicity, creed, color, national origin, sex, age, disability, marital status, genetic predisposition, sexual orientation, gender, gender identity or citizen status in all decisions, including but not limited to recruitment, the administration of its educational programs and activities, hiring, compensation, training and apprenticeship, promotion, upgrading, demotion, downgrading, transfer, layoff, suspension, expulsion and termination, and all other terms and conditions of admission, matriculation, and employment.

For the full policy statement see <https://www.touro.edu/non-discrimination/>.



Touro College Accreditation

Touro College was chartered by the Board of Regents of the State of New York in June 1970.

Touro College is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104, (267) 284-5000. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the United States Secretary of Education and the Council for Higher Education Accreditation. This accreditation status covers Touro College and its branch campuses, locations and instructional sites in the New York area, as well as branch campuses in Illinois, Berlin, Jerusalem, and Moscow.

Touro University California and its Nevada branch campus, as well as Touro University Worldwide and its Touro College Los Angeles division, are separately accredited institutions within the Touro College and University System, accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges (WASC), 985 Atlantic Avenue, Alameda, CA 94501, (510) 748-9001.

NYSCAS – Medical Imaging Program Accreditation

The Program holds full accreditation by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The JRCERT may be reached by mail at 20 North Wacker Drive, Suite 2850 Chicago, IL 60606 or by phone @ (312) 704-5300. Upon completion, the student will be prepared to take the Registry Examination offered by the American Registry of Radiologic Technologists (ARRT) and recognized by the New York State Department of Health as a prerequisite for State licensure.



Table of Contents

General Information 6

About this Catalog 6

School Calendar 6

Accreditation 7

Mission Statement 7

Program Goals 7

Student Learning Outcomes 7

Program Effectiveness 8

Skills You Need 8

Nature of Work 9

Technical Standards 9

Environmental Conditions 10

Background Information 11

Employment Prospects 11

Admission Criteria 11

Admission Procedure 12

Program Requirements 12

Student Records and Transcripts 13

Tuition Policy 13

Financial Aid 13

School Facilities 14

Resources and Services 14

Transfer Credit Policy 15

Radiation Safety, Protection, and Monitoring Policy 15

MRI Rotation Safety 17

Pregnancy Policy 17

Career Opportunities 18

General Certificate Program Schedule 19

A.A.S. Program Schedule 20

Course Descriptions 21



General Information

Touro College offers two programs in Medical Imaging: a General Certificate program for students who have a degree and want to be certified in radiologic technology and an Associates in Applied Science (AAS) program that is the minimum requirement to enter the field of radiography. Both programs can be completed in two years. The curriculum consists of radiography class work and clinical experience.

Under the supervision of professional radiographers, students perform various radiographic examinations and procedures. Students gain experience in routine radiography, trauma radiography, fluoroscopy, mammography and tomography. In addition, elective rotations in nuclear medicine, ultrasound, angiography, computerized tomography (CT), cardiac catheterization, and MRI are also offered.

All students meeting the program’s graduation requirements shall be eligible to sit for the National Registry Examination given by the American Registry of Radiologic Technologists (ARRT). Upon successfully completing the ARRT examination, the student will also receive a New York State license to practice radiography in the State of New York.

Touro College’s program is fully accredited by the Joint Review Commission on Education in Radiologic Technology (JRCERT), telephone (312) 704-5300, and licensed by the New York State Department of Health, Bureau of Environmental Radiation Protection, under Article 35 of the Public Health Law.

About this Catalog

Students are responsible for knowing the School’s policies and procedures as published in this Catalog. Please take the time to read it carefully. If students cannot find the answers to their questions, please contact (212) 939-3475 or (212) 939-3476 regarding educational policy and procedures. This Catalog is intended only to provide information for the guidance of Touro College students. The information is subject to change, and Touro College reserves the right to depart without notice from any policy or procedure referred to herein. This Catalog is not intended to be and should not be regarded as a contract between Touro College and any student or other person.

School Calendar

The school year is divided into three semesters. Classes are in session throughout the year with the exception of scheduled school vacations.



Accreditation

The program is accredited by the following:

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

Mission Statement

The NYSCAS Medical Imaging Program's (hereinafter referred to as The Program) mission is to graduate competent professional Radiologic Technologists who will provide high quality Radiologic health care to the community. The Program is dedicated to training and graduating students with the necessary entry-level skills required to function as Radiologic Technologists.

Program Goals

The program goals are as follows:

1. Graduates will possess the knowledge and skills of a competent entry level radiographer.
2. Graduates will become effective communicators
3. Graduates will demonstrate critical thinking skills
4. Graduates will demonstrate professionalism

Student Learning Outcomes

- Student shall demonstrate proper positioning skills
- Student shall select appropriate exposure factors
- Student shall provide patient care practices
- Student shall effectively communicate in a healthcare setting
- Student shall be able to write effectively
- Student shall demonstrate age appropriate skills
- Student shall modify routine imaging protocols for trauma patients
- Student shall evaluate radiographic images for errors that require corrective action
- Students shall have the ability to work as a member of a team
- Students shall demonstrate reliability and dependability



Program Effectiveness

- Graduates shall achieve an employment rate consistent with its program's mission and goals
- Graduates will express satisfaction with the training they received.
- Graduates shall be successful in the ARRT Certification examination on their first attempt.
- Graduates actively pursuing employment shall be employed within 12 months of graduation.
- Employers shall be satisfied with graduates' knowledge, skill and work ethic.
- Students shall be expected to successfully complete the program within 24 months

Program outcome data can be found on the website: <https://nyscas.touro.edu/academics/medical-imaging/goals-outcomes-effectiveness/>

Skills You Need

You will be an excellent candidate for this field if you like to be active and enjoy working with a variety of people. Good communication, problem-solving, and analytical skills are important for radiographers. The profession is a physically demanding one. Tasks on a typical day include assisting with lifting patients, transporting patients on stretchers or in wheelchairs and moving heavy portable imaging equipment within the hospital. The environment is fast paced and stressful and you will be on your feet for several hours at a time. The radiographer must also respond to audio signals and alarms and be able to differentiate subtle shades of gray on a diagnostic image. Radiologic technologists should be sensitive to patient's physical and psychological needs. They must pay attention to detail and be able to work as part of a team. In addition, operating complicated equipment requires mechanical ability and manual dexterity.

A prospective student should have:

- A desire to work with ill and disabled people, as well as with other health professionals
- An ability to do precise work accurately
- An interest in operating machinery and equipment
- An interest in science
- Good physical and mental health



Nature of Work

Radiologic Technologists take x-rays and administer non-radioactive materials into patients' blood streams for diagnostic purposes. They also produce x-ray images of internal parts of the body for use in diagnosing medical problems. They prepare patients for radiologic examinations by explaining the procedure, removing articles such as jewelry, through which x-rays cannot pass, and positioning patients so that the parts of the body can be appropriately radiographed. To prevent unnecessary radiation exposure, they surround the exposed area with radiation protective devices, such as lead shields, or limit the size of the x-ray beam. Radiographers position radiographic equipment at the correct angle and height over the appropriate area of a patient's body. Using instruments similar to a measuring tape (caliper); they may measure the thickness of the section to be radiographed and set controls on the x-ray machine to produce radiographs of the appropriate density, detail, and contrast. Experienced radiographers may perform more complex imaging procedures.

- ❖ **CT technologists**, operate computerized tomography scanners to produce cross-sectional images of patients.
- ❖ **MRI technologists** operate machines using strong magnets and radio waves rather than radiation to create cross-sectional images and are called magnetic resonance imaging technologists
- ❖ **Ultrasound technologists** operate using sound waves rather than radiation to create **cross-sectional images of the body.**
- ❖ **Radiation Therapy technologists** operate large machines delivering precise amounts of radiation to cancer patients.
- ❖ **Nuclear Medicine technologists** give patients radioactive materials to produce images of physiologic function.
- ❖ **Radiologic technologists** produce images of various anatomical parts of the body and must follow physicians' orders precisely and conform to regulations concerning use of radiation to protect themselves, their patients, and coworkers from unnecessary exposure.

Technical Standards

In order to gain admission to the Program, all students must be able to perform numerous physical skills that require at least an average amount of physical coordination. Students shall be able to manipulate technical equipment for the procedures. While performing clinical training students shall be required to meet the technical standards that are not limited to, but include:

- **Communication** – verbal and non-verbal communication between patients, co-workers, visitors and physicians. Must be able to read, write, and speak the English language and communicated in an understandable manner.



- **Auditory Skills** – hearing a patient’s, co-worker’s or visitor request for help, and taking instructions from physicians and supervisors when background noise is high. Engage in normal conversations from a distance of 20 feet. Recognize and respond to alarms from patient equipment, x-ray equipment, or computer.
- **Psychomotor Skills and Coordination** – performs physical movements required in lifting and moving patients and handling radiographic equipment.
- **Visual Acuity** – reading instructions, books, computer screens, technique charts, and patient requisitions with extreme accuracy. Must be able to view images for accuracy.
- **Dexterity** – Sufficient gross and fine motor coordination to manipulate radiographic equipment and computer skills.
- **Emotional Maturity** – possesses emotional health necessary to fulfill program requirements, such as, integrity, compassion, initiative, and good judgement in stressful situations.
- Lift up to 50 lbs on an occasional basis
- Prolonged standing
- Pushing/ pulling of equipment
- Bending and reaching

Visual Acuity Requirements

- During clinical assignments, students are required to use a computer terminal and set the proper exposure techniques on the x-ray equipment.
- Clinical assignments require working with printed and/or written documentation.
- Students must be able to assess patient’s condition, i.e. color, respiration, motion etc.
- Clinical assignments require critiquing of radiographs.

Environmental Conditions

As a Radiologic Technology student, you will be exposed to a variety of substances within the work environment and clinical sites. You can expect exposure to blood, body tissues, and fluids. There is the potential of exposure to electrical hazards, hazardous waste materials, radiation, poisonous substances, chemicals, loud or unpleasant noises and high stress emergency situations.

Students are given instruction about OSHA Blood-Borne Pathogen and Universal Precautions prior to starting clinical rotations.



Background Information

Prior to enrolling in the Program, students are advised to review the applicable licensure/certification requirements. A conviction of a felony or a misdemeanor is considered to be a violation of the Standards of Ethics. Eligibility for licensure may be limited by the results of a criminal background investigation. Information about this can be obtained from the American Registry of Radiologic Technologists, www.ARRT.org.

All healthcare workers and students are required to undergo a criminal background check in order to work in a clinical setting. A student with a positive background check containing disqualifying conditions as defined by Federal and State law will NOT be allowed to enter the program.

Employment Prospects

Employment of Radiologic Technologists is expected to increase by about 14 percent from 2016 to 2026, faster than the average for all occupations, according to the *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook*. As the population grows and ages, there will be an increasing demand for diagnostic imaging. In addition to job growth, job openings also will arise from the need to replace technologists who leave the occupation. Those with knowledge of more than one diagnostic imaging procedure – such as CT, MR, and mammography – will have the best employment opportunities as employers seek to control costs by using multi-credentialed employees. Demand for Radiologic Technologists can tend to be regional with some areas having large demand, while other areas are saturated. Technologists willing to relocate may have better job prospects. Besides full time positions, there are often opportunities for part time and on call work.

A Radiographer may be employed in the radiology departments of hospitals, clinics, imaging centers, urgent care clinics and other health care facilities. There are also opportunities in industry, public health services, college health services, Peace Corps and other international organizations.

A Radiographer may advance to management, education, or equipment sales. Salaries may vary nationwide; however, the range is usually reflective of skills, education, and experience. Excellent benefit packages often accompany a higher than average pay scale.

Admission Criteria

The applicant shall:

1. Be at least eighteen (18) years old by December 31st of admission year.
2. Graduate from an accredited high school or equivalent.
3. Take the Test of Essential Academic Skills (TEAS V), formerly known as the Health Occupations Aptitude Examination (HObET). TEAS is a timed test administered by NYSCAS at the close of the admissions process (after March 31st). There is a testing fee that must be paid at the time of testing (\$25 per student). Tests can be taken on a Sunday or



during a week day. The focus of the test is to assess a candidate's knowledge of Reading, Mathematics, Science, as well as English and Language usage.

4. Applicants not possessing an Associate's Degree, AAS, must be able to complete the minimum degree requirements at Touro College.
5. Take a Math and General Science test provided by the program.
6. Pay a non-refundable \$60.00 application. (See NYSCAS fee schedule for other applicable fees)

Applications and Inquiries

Inquiries regarding the program should be directed to:

Medical Imaging Program
506 Lenox Avenue, KP 415
New York, New York 10037

Telephone inquiries may be made at (212) 939-3475 or (212) 939-3476.

All application material must be completed before an interview can be scheduled.

All applications must be received by March 31st.

Admission Procedure

The following information is necessary to process your application:

1. Official High School Transcripts
2. Official Transcripts from all Colleges and Universities previously attended.
3. TEAS V and Math with General Science test.
4. Three letters of recommendation (follow guidelines for references).
5. Application fee of \$60.00 made payable through TouchNet
6. Completed and signed application.
7. Submit a personal statement in the form of an essay describing reasons for choosing a career in radiologic technology and reasons for choosing the Medical Imaging Program. Students should review the technical standard to be certain that they can meet all physical requirements of the profession.

Program Requirements

1. Students are required to purchase specific uniforms and furnish their own transportation to and from Harlem Hospital Center and other clinical affiliates (i.e., Kings County Medical Center, Elmhurst Hospital etc.).



2. Students shall maintain an overall average in each didactic course and for clinical competencies to remain in good academic standing. Failure to do so shall result in the imposition of disciplinary action to include probation/dismissal. Students should refer to the NYSCAS Catalog and Student Handbook for the official average guidelines.
3. Failure of two (2) sequential courses (e.g. Physics I and Physics II) will result in dismissal.
4. Students must complete all clinical requirements as set forth in the program manual.
5. The approximate cost of textbooks is \$1,584.00 for the two-year program. The cost of the textbooks is not included in the tuition. A list of required textbooks will be distributed during orientation.
6. Uniforms – approximately \$300
7. Student/Administrative Fee - \$100 per semester
8. Technology Fee - \$150 per semester

Student Records and Transcripts

The Program maintains all grade records for students. Students who have graduated from the program may request a transcript for a fee of \$10.00. The request for a transcript must be on the transcript request form, with the signature of the person requesting the transcript. Please send all transcript requests to the address on the front cover of this catalog. The Radiography Program maintains academic records for all students that are updated every semester.

Tuition Policy

Tuition is \$7,690.00, per semester for the fall and spring semesters. Tuition for the summer semester is \$3,810.00 each. Tuition is due before the beginning of each semester. Tuition may be deferred pending awards or grant certification. Refer to the Tuition Refund policies as prescribed by Touro College in the NYSCAS Catalog: <https://nyscas.touro.edu/students/>. Failure to pay tuition when it becomes due will result in suspension of the student until the tuition is paid. Failure to meet all financial obligations to the school will severely interrupt the student's education and may result in ineligibility for graduation.

Financial Aid

The Medical Imaging Programs are recognized as an eligible institution of higher education for purposes of state financial aid programs. These include New York State and Veterans Benefit, and Federal financial aid such as Pell Grants and Stafford loans. Students receiving scholarships (1199 Union, VESID etc.) may defer that part of their tuition that will be covered by the scholarships. The remaining amount must be paid by the due date.



School Facilities

All radiologic core classes and laboratory sessions are held in the school at Harlem Hospital Center. In addition to Harlem Hospital Center, clinical education takes place in the Department of Radiology at Metropolitan Hospital Center, Kings County Hospital Center, Elmhurst Hospital Center, North Central Bronx Hospital and various Rad. Net imaging centers. The extensive number of radiographic examinations and procedures performed enable students to experience the widest possible range of clinical education.

Resources and Services

The enrolled student shall 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. All equipment is either computed radiography or direct radiography.
- Touro College Library and Harlem Hospital Center Library – 6th floor MLK Building
- All students have the same access as any employee to all library services.

Computer Labs

There is a dedicated computer lab in which all students are encouraged to review for classes and for the national registry examination. A variety of questions and answers simulating computer-generated examinations are available to students and technologists preparing for the national registry examination. The lab is equipped with computers with internet access. Printers are also available. The computers are accessible to all students having their unique ID.

Physical and Vaccinations

- The Program will provide a pre-matriculation physical to include drug screening, at no cost. Hepatitis B and vaccinations for childhood diseases is also offered at no cost. Yearly influenza vaccinations are free.

CPR Certification

- The student shall be an American Heart Healthcare Provider CPR certified at no cost.

Personal Counseling

- The Program Director maintains a list of personal counseling services in the city. The Program does not recommend a particular service. It is the responsibility of the student to determine insurance acceptance.



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.

Transfer Credit Policy

Transfer credits are not accepted for any of the medical imaging courses.

For all other liberal arts courses, the medical imaging program adheres to the [Touro College Undergraduate Transfer Credit Policy](#).

Radiation Safety, Protection, and Monitoring Policy

Students will be made aware of methods and procedures for protecting themselves, the patient and the general public from unnecessary exposure to radiation before being allowed to use the college non-energized lab or to be out on the floor interacting with patients at the Clinical Sites.

- The students shall utilize ionizing radiation equipment in a safe manner and provide patient and personnel protection by practicing the following:
 - Implementation of the Three Cardinal Rules (time, distance, & shielding) of Radiation Protection.
 - Wearing a dosimeter at the *collar* at all times. During fluoroscopy the dosimeter must be worn *outside* the lead apron
 - Providing gonadal shielding correctly, as the specific exams allow.
 - Wearing protective apparel (lead aprons, thyroid shields, etc.) during any fluoroscopic or mobile procedure.
 - Questioning all female patients of childbearing age, as to the likelihood of pregnancy.
 - Complying with the program policy prohibiting the holding of patients during exposure.
 - Complying with the program policy pertaining to student pregnancy.
 - Complying with the program policy pertaining to performing any repeat exposure under direct supervision only.
- Students shall be issued a dosimeter to be worn at their clinical assignment. The Clinical Coordinator will supply the radiation monitor (dosimeter) to the students before they are assigned to the clinical sites. Wearing the radiation-monitoring device is done in order to maintain accordance with established recommendations of the National Council on Radiation Protection and Measurements (NCRP) and current regulations of the State of New York Bureau of Environmental Control. In that radiation doses are maintained “As



Low As Reasonable Achievable,” (ALARA) and to provide protection for the program by providing documentation and proper management of student radiation exposure.

- Students shall not, under any circumstances, be allowed to perform radiologic examinations without wearing their dosimeter. The dosimeter is to be worn at the collar level and outside the protective lead apron. The student is responsible for wearing the radiation monitor whenever they report to the Clinical Site. In the case of a lost or damaged monitor, the students shall report the situation to the Clinical Coordinator and a replacement dosimeter shall be ordered. The Student shall be responsible for the cost of the replacement dosimeter. The student shall not attend their clinical assignment until the new dosimeter is received. The student is then responsible for making up any clinical assignment in accordance with the attendance policy.
- In an effort to keep the radiation exposure levels of students, the patient, and the general public to a minimum, the following guidelines are established:
 - Students shall not hold patients during exposure for any reason.
 - Students shall not make an exposure while another Radiology employee holds the patient
 - Students shall inform the Clinical Coordinator of any incidences of their dosimeter being exposed while it was not being worn.
 - The student shall inform the Clinical Coordinator of any incidences that may have caused excessive radiation to themselves. The Clinical Coordinator shall report this to the Program Director and the Director of Education, who, if deemed necessary, shall report the incident to the Radiation Safety Officer for appropriate follow up.
 - Upon receipt of the monthly radiation monitoring report, the Clinical Coordinator shall:
 - Review the report and post the exposure statement on the bulletin board of the Administrative Offices. Each student is expected to initial and date the report to indicate they have reviewed it.
 - A monthly exposure report above 42mrem shall be deemed higher than expected with the following actions to occur:
 - The Clinical Coordinator shall review the report with the student in an effort to determine possible reasons for the elevated exposure.
 - The Clinical Coordinator shall document any findings that may explain the excess exposure on the student’s exposure report.
 - If overexposure is due to student negligence or disregard of radiation safety, the student’s suitability for the radiography field will be reevaluated.



- Any documentation of excessive radiation will be reviewed by the Radiation Safety Officer for appropriate follow-up.
- All documentation will be maintained in the student's file.

A Cumulative report of student's exposure history during their enrollment in the Program shall be issued upon request when the student graduates or withdraws from the Program.

This Policy can be found on the Program website: <https://nycas.touro.edu/academics/medical-imaging/> and is covered in the orientation to the program.

MRI Rotation Safety

Students may complete an observational rotation in an MRI department during their second year. Students should be aware that this rotation may be contraindicated for a variety of issues. The MRI magnetic field is always on.

Students with any type of metal device inside their body must not enter an MRI exam room unless the device is certified as MRI safe. Below is a partial list of concerns for MRI.

- Pacemakers and implantable cardioverter defibrillators (ICD's)
- Inner ear (cochlear) implants
- Orthopedic prosthetic implants
- Neuro-muscular stimulators such as those used for pain management or muscle rehabilitation
- Implanted drug infusion pumps
- Brain aneurysm clips that are not approved for MRI
- You should avoid MRI if you have metal fragments in your body. Metal fragments in the eyes can be especially dangerous because the magnet may move the metal causing eye damage or blindness.
- Have a stent or artificial heart valve, or if you have had open-heart surgery recently.

Before students are allowed in the MRI room, students must watch a safety video and complete a safety quiz.

Pregnancy Policy

A student who becomes pregnant has the option of whether or not to disclose her pregnancy. If a student voluntarily declares her pregnancy, it must be done in writing to the program director using the Declaration of Pregnancy form. This form is available from the program director. The Program



Director will provide information about radiation protection during pregnancy and will discuss the options available to the student. These options are listed below.

Should a student become pregnant, the student is encouraged to notify the Program Director, *in writing*, as soon as possible. **This is a recommendation only and the student has the option of continuing the educational program without modification or interruption and without a declared pregnancy.** However, the *declared* pregnant student:

- Will indicate her expected date of delivery.
- Will *meet* with the Radiation Physicist for appropriate counseling.
- Will be *assigned* an additional “baby badge” and instructed in its use.
- May request maternity leave or leave of absence.
 - Any requested absence from the program must be requested in writing according to the Program's Policies.
- May *withdraw* the declaration, *in writing*, at any time.

A second dosimeter will be issued to the student, to be worn at the level of the abdomen to monitor fetal dose, Should a lead apron be worn, the second dosimeter is placed at the level of the abdomen underneath the apron.

In the absence of a voluntary written disclosure the student shall continue in the program unmodified.

This Policy can be found on the Program website: <https://nyscas.touro.edu/academics/medical-imaging/> and is covered in the orientation to the program.

Career Opportunities

Touro College offers students a wide variety of clinical experiences and classroom work designed to prepare them to enter the field of Imaging Sciences as Radiologic Technologists. Jobs for Radiologic Technologists are available in hospitals, clinics, doctor’s office, the military and private industries. Once a graduate receives recognition by the American Registry of Radiologic Technologists (ARRT), he/she may be employed in any state in the country. In addition, many foreign countries have reciprocal agreements with the United States and welcome American trained Radiologic Technologists.

Employment opportunities for registered Radiologic Technologists are available in healthcare, education, administration, research and private industry. Also, technologists may wish to gain additional training in any of the following specialty areas:

- Vascular Imaging (Special Procedures)
- Computerized tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Medical Sonography
- Nuclear Medicine
- Bone Densitometry
- Mammography
- Quality Management



General Certificate Program Schedule

| Course Number | Course Name | Credit Hours |
|--|-------------------------------------|--------------|
| First Semester (Fall One) | | |
| GSBN117 | Human Anatomy and Physiology I /Lab | 4 |
| GSPN110 | Introductory Physics | 3 |
| GRTN101 | Principles of Imaging I | 3 |
| GHUN150 | World of Work | 2 |
| Second Semester (Spring One) | | |
| GRTN103 | Radiation Protection | 2 |
| GRTN141 | Radiographic Anatomy II | 3 |
| GRTN131 | Radiographic Procedures I | 4 |
| GRTN111 | Patient Care I | 3 |
| GRTN102 | Principles of Imaging II | 2 |
| GRTN151 | Radiation Physics I | 2 |
| GRTN121 | Clinical Radiography I | 1 |
| Third Semester (Summer One) | | |
| GRTN122 | Clinical Radiography II | 0.5 |
| GRTN132 | Radiographic Procedures II | 4 |
| GPHN233 | Biomedical Ethics | 3 |
| Fourth Semester (Fall Two) | | |
| GRTN112 | Patient Care II | 3 |
| GRTN142 | Radiographic Anatomy III | 3 |
| GRTN123 | Clinical Radiography III | 1.5 |
| GRTN133 | Radiographic Procedures III | 4 |
| GRTN152 | Radiation Physics II | 2 |
| Fifth Semester (Spring Two) | | |
| GRTN160 | Advanced Imaging | 3 |
| GRTN161 | Radiation Biology | 3 |
| GRTN124 | Clinical Radiography IV | 1.5 |
| GRTN162 | Comprehensive Review | 4 |
| GRTN163 | Radiographic Pathology | 3 |
| TOTAL GENERAL CERTIFICATE CREDITS | | 64.5 |



A.A.S. Program Schedule

| Course Number | Course Name | Credit Hours |
|--|-------------------------------------|--------------|
| First Semester (Fall One) | | |
| GLLN121 | College Writing I | 4 |
| GSMN130 | College Math | 3 |
| GSDN117 | Human Anatomy and Physiology I /Lab | 4 |
| GSON322 | Sociology of Health Care | 3 |
| GSPN110 | Introductory Physics | 3 |
| GRTN101 | Principles of Imaging I | 3 |
| Second Semester (Spring One) | | |
| GRTN103 | Radiation Protection | 2 |
| GRTN141 | Radiographic Anatomy II | 3 |
| GRTN131 | Radiographic Procedures I | 4 |
| GRTN111 | Patient Care I | 3 |
| GRTN102 | Principles of Imaging II | 2 |
| GRTN151 | Radiation Physics I | 2 |
| GRTN121 | Clinical Radiography I | 1 |
| Third Semester (Summer One) | | |
| GRTN122 | Clinical Radiography II | 0.5 |
| GRTN132 | Radiographic Procedures II | 4 |
| GPHN233 | Biomedical Ethics | 3 |
| GHUN150 | World of Work | 2 |
| Fourth Semester (Fall Two) | | |
| GRTN112 | Patient Care II | 3 |
| GRTN142 | Radiographic Anatomy III | 3 |
| GRTN123 | Clinical Radiography III | 1.5 |
| GRTN133 | Radiographic Procedures III | 4 |
| GRTN152 | Radiation Physics II | 2 |
| Fifth Semester (Spring Two) | | |
| GRTN160 | Advanced Imaging | 3 |
| GRTN161 | Radiation Biology | 3 |
| GRTN124 | Clinical Radiography IV | 1.5 |
| GRTN162 | Comprehensive Review | 4 |
| GRTN163 | Radiographic Pathology | 3 |
| TOTAL GENERAL CERTIFICATE CREDITS | | 74.5 |



Course Descriptions

Be advised, courses are listed alphabetically, not in the sequence they are offered.

All the information contained herein is subject to change.

GRTN160 Advanced Imaging - 3.0 Credits: This unit will provide the students with the basic fundamental concepts pertaining to special procedures including: Gastric Procedures/Fluoro, OR/Port Fluoroscopy, Mammography, CT, MRI, Pediatrics and Geriatrics. The patient care, radiation protection, positioning techniques and equipment required for each procedure will also be discussed.

GPHN233 Biomedical Ethics - 3.0 Credits: This course is designed to provide a fundamental background in ethics. With both the historical and philosophical basis ethical behavior will be discussed. Ethical issues and dilemmas found in clinical practice will be examined. Legal terminology, concepts and principles will be presented. The ASRT scope of practice, misconduct, malpractice, and other legal and professional standards will be discussed.

GRTN121 Clinical Radiography I - 1.0 Credit: This is the first of four clinical externship courses. This course is designed to provide the student with hands-on-radiographic positioning and patient care experience at a clinical site under the supervision of a qualified Radiologic technologist. Emphasis is placed on achieving clinical competency in performing radiographic examinations of the chest, abdomen, upper and lower extremities as per the A.R.R.T. competency requirements for primary certification in radiography. In addition, student must demonstrate appropriate critical thinking and affective skills and the clinical education setting.

GRTN122 Clinical Radiography II - 0.5 Credit: This is the second of four clinical externship courses. This course is designed to provide the student with hands-on-radiographic positioning and patient care experience at a clinical site under the supervision of a qualified Radiologic technologist. Emphasis is placed on achieving clinical competency in performing radiographic examinations of the chest, abdomen, upper and lower extremities as per the A.R.R.T. competency requirements for primary certification in radiography. In addition, student must demonstrate appropriate critical thinking and affective skills and the clinical education setting.

GRTN123 Clinical Radiography III - 1.5 Credits: This is the third of four clinical externship courses. This course is designed to provide the student with hands-on-radiographic positioning and patient care experience at a clinical site under the supervision of a qualified Radiologic technologist. Emphasis is placed on achieving clinical competency in performing radiographic examinations of the chest, abdomen, upper and lower extremities as per the A.R.R.T. competency requirements for primary certification in radiography. In addition, student must demonstrate appropriate critical thinking and affective skills and the clinical education setting.

GRTN124 Clinical Radiography IV - 1.5 Credits: This is the fourth of four clinical externship courses. This course is designed to provide the student with hands-on-radiographic positioning and patient care experience at a clinical site under the supervision of a qualified Radiologic



technologist. Emphasis is placed on achieving clinical competency in performing radiographic examinations of the chest, abdomen, upper and lower extremities as per the A.R.R.T. competency requirements for primary certification in radiography. In addition, student must demonstrate appropriate critical thinking and affective skills and the clinical education setting.

GSMN 130 College Mathematics - 3.0 Credits: Algebraic topics including linear equations and inequalities, systems of equations, quadratic equations, all including word problems. Exponents and radicals, operations with polynomials, factoring, and graphing. Prerequisite: GSMN 001, GSMN 001.2, or placement by examination or appropriate transfer credit in mathematics.

GLLN121 College Writing I – 4.0 Credits: Extensive practice in expository writing, with emphasis on the composition of a three- to five-page research paper in MLA format. Prerequisite: GLLN 110 or placement

GRTN162 Comprehensive Review - 4.0 Credits: This course is designed to provide the student with a comprehensive review to prepare the student for the ARRT certification in radiology. Student will be administered mock examinations to simulate actual exam conditions. Stress reduction and test taking skills will be emphasized. This course also includes a complete review of the radiography curriculum in preparation for the American Registry of Radiologic Technologists National examination.

GSBN117 Human Anatomy and Physiology I / Lab – 4.0 Credits: This course is designed for pre-professional students (i.e., OTA, PTA and Medical Coding) as an introduction to a basic understanding of the structural organization of the human body starting with the tissues, integumentary, skeletal, muscular, digestive and nervous systems. The course will focus on the cellular organization and on the tissue and organ level of each system. In laboratory exercises, students study and learn structures from various available anatomical models. Not for science majors.

GSPN110 Introductory Physics - 3.0 Credits: The Course is designed to provide an introductory survey to basic physics. This course will include discussions in the following subject areas; the structure of matter, electricity, magnetism and electromagnetism.

GRTN111 Patient Care I - 3.0 Credits: This course introduces the concepts and techniques of patient assessment and patient care. The student will demonstrate proficiency in measuring vital signs and pulse oximetry, and taking a complete patient medical history. Care of patients receiving contrast media, having central venous line or nasogastric tube. An Introduction to EKG and interpretation of EKG waveform will be discussed. Knowledge of common medical emergencies and how to deal with them will be introduced to students.

GRTN112 Patient Care II - 3.0 Credits: This course introduces the concepts and techniques of patient assessment and patient care. The students learn how to admit a patient to the radiology department and how to properly move and transfer patients. The students are taught to care for patients with various problems (e.g. skull or spinal injuries, pediatric or geriatric patients, shock,



etc.). Proper methods of the administration of enemas and caring for patients with various types of tubes are discussed. Surgical aseptic technique, and proper skin preparation. The student is taught how to assist with drug and contrast media administration. Various contrast complications and anaphylactic reactions are discussed. Transmission of microorganisms and isolation techniques are learned.

GRTN101 Principles of Imaging I - 3.0 Credits: A study of radiographic imaging and the production of quality x-ray images. This unit will provide the student with knowledge on the production and control of scatter radiation, intensifying screens, cones and collimators, grids, formulations exposure techniques, AED, technique charts. Screen-film Radiography and Screen-film Radiographic Technique, Image Artifacts and Screen-film radiographic quality control.

GRTN102 Principles of Imaging II - 2.0 Credits: This course will include discussions on the following subject matters; Computers in medical imaging and Computed Radiography; Digital Radiography, Digital radiographic technique, Viewing the digital radiographic image. Digital radiographic artifacts Digital radiographic quality control.

GRTN161 Radiation Biology - 3.0 Credits: This course provides instruction on the principles of cell radiation interaction. Radiation effects on cells and factors affecting cell response are presented. Acute and chronic effects of radiation are discussed. Topics include: radiation detection and measurement; patient protection; personnel protection; absorbed dose equivalencies; agencies and regulations; introduction to radiation biology; cell anatomy; radiation/cell interaction; and effects of radiation.

GRTN151 Radiation Physics I - 2.0 Credits: This course will include discussions on the following subject matters; The essential concepts of Radiologic Science, The structure of matter, Electromagnetic energy, electricity, magnetism and electro magnetism.

GRTN152 Radiation Physics II - 2.0 Credits: This course will provide the information on the special equipment used in radiography such as fluoroscopy, TV camera and different recording systems. The content of this course will provide the student the necessary knowledge on the quality control and quality assurance of the radiographic department. The equipment used for different quality control tests, maintenance of the different radiographic equipment and the different methods to troubleshoot malfunctions are discussed.

GRTN103 Radiation Protection - 2.0 Credits: The unit will provide the students with knowledge of the basic elements of radiation protection for the patient, radiographer, other personnel and the general public, shielding requirements, units of measurements and exposure monitoring are discussed. The principles and concept explaining basic interaction with matter, maximum permissible doses and the effects of measurements are also included. Content of this course is designed to impart awareness on the proper application of radiation limiting devices and techniques, radiation monitoring systems, safety standards, units of measurement and calculation exposure.



GRTN141 Radiographic Anatomy II - 3.0 Credits: This course is to introduce the students to the body systems and their interdependency, cells and tissues and the structure and function of the integumentary system. Information on related topographical anatomy and essential terminology will be presented. The course will provide classroom instruction concerning the following system: skeletal and muscular. The course will include information on the structure and function of the component part of each system as well as general anatomy and related terminology.

GRTN142 Radiographic Anatomy III - 3.0 Credits: This course is designed to provide each student with knowledge of the basic structure and function of human body. The course material is presented in lecture format. The course covers the This course is an introduction to human anatomy and physiology from an integrative perspective. Students learn the structure and function of the tissues, the skeletal system, the nervous system, the endocrine system, and muscle function from the level of the cell to the level of the organism. Emphasis will be placed on Radiologic Anatomy. At the end of the entire course, the student should be familiar with all principal organs of the human body, should have a good working knowledge of their functions and interactions, should have a basic understanding of human metabolic processes and should understand the elements of human anatomy. This course will use both a systems & regional approach to uncover the anatomy. It is our intention to provide the best environment to facilitate your learning. You will be encouraged to discuss, challenge, and critique information by interacting with your peers and the instructors.

GRTN163 Radiographic Pathology - 3.0 Credits: This course will acquaint the student radiographer with basic medical terminology used to describe various pathologic conditions occurring in the human body and introduce the student to some specific imaging techniques.

GRTN131 Radiographic Procedures I - 4.0 Credits: This course will provide the student with the fundamental knowledge of skeletal anatomy. The course will teach the student different positioning terminology and basic positioning principles as well as x-ray projections and how the two relate to create an image. Anatomical regions that the student will know how to image include: chest, abdomen, fingers, hand, wrist, arm, elbow and shoulder joints, entire leg including hip, knee and ankle joints and foot; pelvis including ilium and 51 joints, axial spine and thorax.

GRTN132 Radiographic Procedures II - 4.0 Credits: This course will provide the student with the fundamental knowledge of skeletal anatomy. The course will teach the student different positioning terminology and basic positioning principals as well as x-ray projections and how the two relate to create an image. Anatomical regions that the student will know how to image include: radiographic positioning of the lower extremities and pelvic girdle.

GRTN142 Radiographic Procedures III - 4.0 Credits: The core of this course will consist of positioning of the bones of the thorax and spine. Specific procedures for mobile, operating room, pediatric and geriatric imaging will be covered. Review of anatomy and image evaluation for each area of interest is also included. Including demonstration and practice of radiographic positioning for the bones of the thorax and spine discussed in the classroom. Students will also be evaluated



on their ability and skills to perform previously covered procedures, diagram and image identification of anatomy and positioning errors.

GSON322 Sociology of Health Care - 3.0 Credits: An overview of the sociology of medicine, with a focus on the relationships between social conditions, as the context, and health and disease in human populations, as outcomes. Utilizing sociological methods of analysis, the course investigates the history, function and structure of health care institutions, the roles of patients and health care practitioners, as well as social processes and social behaviors that influence the incidence of sickness and health. Prerequisite: GSON 121

GHUN150 World of Work - 2.0 Credits: This interactive, hands-on course that will focus on professional development skills. Through class lectures, mock interviews, resume writing, guest speakers, practice sessions and homework assignments, students will learn work place etiquette advancement strategies and an introduction to leadership and professional communication/presentation skills.