RADIOLOGIC TECHNOLOGY
(A.A.S Degree)
Director: Prof. Virginia Mishkin, M.S., R.T. (R) (M) (QM)

A radiologic technologist is a skilled professional who provides a specialized health care service. This rewarding profession involves the operation of sophisticated equipment in a rapidly expanding field. The Radiologic Technology Program in the Department of Nursing and Allied Health Sciences at Bronx Community College prepares students as entry-level qualified licensed and registered radiographers.

The term “diagnostic radiography” is used to describe a variety of radiographic or x-ray examinations. Most people are familiar with chest x-rays and also x-rays to diagnose broken bones. The radiographer performs these procedures as well as those which require the use of contrast agents that make it possible to study organs that otherwise cannot be seen.

Admission requirements for Radiologic Technology curriculum include:

- Complete all required remediation and successfully pass all CUNY Skills Assessment Tests.
- Achieve a minimum grade of C+ in BIO 23 and MTH 13 by the conclusion of Spring semester prior to entry. The Radiologic Technology Program only admits students in the fall.
- Possess an overall average of 2.77 or higher. It is recommended that ENG 10/11, HIS 10/11, CMS 11, PSY 11, BIO 24, and PEA be completed prior to entry to the Radiologic Technology course work (RAD and CLE designated courses). Students who have completed these courses at another college will have to submit their transcripts.
- Pre-radiologic technology students are allowed two attempts to achieve a C+ in BIO 23 (Human Anatomy and Physiology I) and MTH 13 (Trigonometry and College Algebra). A minimum grade of C+ in these courses is a requirement for admission into the Radiologic Technology Program. The Radiologic Technology Program’s Committee on Admissions and Waivers has the right to allow the student an additional attempt when there is evidence of extenuating circumstances. Extenuating circumstances need to have legal and/or official documentation and must be presented to the Committee on Admissions and Waivers before a waiver will be granted.

Radiologic Technology (RAD, CLE) courses are open only to Radiologic Technology majors.

The Radiologic Technology Program is accredited by the Joint Review Committee on Education in Radiologic Technology and the New York State Department of Health.

Students receive their clinical education at Montefiore Medical Center, Jacobi Medical Center, New York Presbyterian Hospital, or Montefiore Medical Center North Division. All facilities are accessible by public transportation.

Upon successful completion of the program, students are eligible for the National and State certifying examinations. Graduates may go on to earn a higher degree in radiological health sciences.
Graduates have a wide selection of clinical settings to choose from, including hospitals and medical centers, out-patient imaging facilities, public health institutions, and government and private research institutes all require radiographers.

Mission Statement
The Mission of the Bronx Community College Radiologic Technology Program is to graduate competent radiographers who are eligible for examination with the American Registry of Radiologic Technologists.

Program Goals
The mission of the program is measured by the standards to which the program meets the following goals:
- Students will be clinically competent radiographers who demonstrate sound reasoning and competent care.
- Students will demonstrate growth in ethical behavior in accordance with professional standards over the course of the program of study.
- Students will demonstrate a progression of technical skills accompanied by critical thinking, communication, and problem solving skills in the practice of diagnostic radiography.
- The program will support and maintain its commitment to the health care community with competent entry-level radiographers who possess a broad range of general education proficiencies.

Radiologic Technology Curriculum
65 Credits required for A.A.S. Degree

Core Requirements
- ENG 10 Fundamentals of Composition and Rhetoric I OR
- ENG 11 Composition and Rhetoric I ................................................................. 3
- CMS 11 Fund. of Interpersonal Communication .....................................................3
- HIS 10 History of the Modern World OR
- HIS 11 Intro. to the Modern World ..................................................................... 3
- PEA Physical Education activity course ................................................................1
- BIO 23 Human Anatomy & Physiology I ..............................................................4
- BIO 24 Human Anatomy & Physiology II .............................................................4
- MTH 13* Trigonometry & College Algebra ............................................................ 3
Total 21

Required Areas of Study
- PSY 11 Introduction to Psychology ...................................................................... 3

Specialization Requirements †
- RAD 11 Fundamentals of Radiologic Sciences and Health Care .......................... 3.5
- RAD 12 Radiographic Exposure I ........................................................................ 2.5
- RAD 13 Radiographic Procedures I ...................................................................... 3
- RAD 14 Recording Media and Processing ............................................................. 1
- RAD 15 Radiographic Anatomy I .......................................................................... 2
- RAD 16 Patient Care and Pharmacology in Radiologic Sciences ........................................2.5
- CLE 11 Clinical Radiography Fundamentals ..................................................................1
- CLE 15 Clinical Radiography I .......................................................................................5
- RAD 22 Radiographic Exposure II ..................................................................................2.5
- RAD 23 Radiographic Procedures II ................................................................................3
- RAD 24 Radiation Protection ..........................................................................................2
- RAD 25 Radiographic Anatomy II ..................................................................................1
- CLE 21 Clinical Radiography II .....................................................................................5
- CLE 31 Clinical Radiography III ....................................................................................1.5
- RAD 32 Imaging Modalities ............................................................................................2
- RAD 33 Radiographic Procedures III & Cross Sectional Anatomy ................................2
- RAD 34 Radiographic Pathology ....................................................................................2
- CLE 41 Clinical Radiography IV ....................................................................................1
- CLE 45 Clinical Radiography V .......................................................................................0.5
- RAD 42 Radiation Biology ..............................................................................................2
- RAD 43 Quality Assessment/Management .....................................................................1
- RAD 71 Radiation Physics ..............................................................................................2
- CLE 51 Clinical Radiography VI ....................................................................................0.5
- CLE 61 Clinical Radiography VII / Senior Seminar .........................................................1.5

Total 41

Note: At least two courses must be taken from a list designated as “Writing Intensive” as published each semester in the Registration Guide and Schedule of Classes.

* MTH 30 should be considered for transfer to a senior college.
† Note that the sequence of the academic and clinical curriculum of the program is scheduled Monday-Thursday between 9 a.m. and 4 p.m (the exception is CLE 11, 9 a.m. to 3 p.m. on Friday).

Basic Life Support and Basic First Aid — All radiologic technology students are required to be certified in cardiopulmonary resuscitation and basic first aid by December 15 of their first clinical year.

Health Requirements — All radiologic technology students must meet special health requirements to practice in clinical agencies.

Malpractice Insurance — Radiologic technology students are required to carry $1-3 million malpractice insurance purchased through Bronx Community College. This must be purchased before September 15 of the first semester of each year.

Students will be accepted and assigned to clinical experiences and otherwise treated without regard to sex, sexual orientation, race, creed, color, national origin, age, marital or veteran status in accordance with the laws of the city, state and nation.
RADIOLOGIC TECHNOLOGY
Department of Nursing and Allied Health Sciences

Radiologic Technology (CLE and RAD) courses are open only to Radiologic Technology majors. CLE courses are given at Montefiore North Division, Montefiore Medical Center, New York Presbyterian Medical Center, and Jacobi Medical Center.

CLE 11 14 days 1 cr
Clinical Radiography Fundamentals
Students function as learning members of the hospital’s radiology department under laboratory conditions. Experience in patient preparation, selection of proper technical factors, administration of ionizing radiation for diagnostic examination with appropriate radiation protection control. Close supervision to develop and evaluate students’ clinical skills. Film evaluation included. 
Prerequisites: BIO 23, MTH 13.

CLE 15 15 days 1 cr
Clinical Radiography I
This course is an orientation to the hospital radiology department. Students are involved in actual patient care situations and utilize radiography equipment for diagnostic examinations with appropriate radiation protection control. Close supervision is provided by faculty to develop and evaluate students’ clinical skills.
Prerequisite: CLE 11.

CLE 21 28 days 0.5 cr
Clinical Radiography II
CLE 21 is a fourteen week clinical experience, designed to put into practice, and demonstrate competency in the procedures learned in CLE 11, RAD 13 and RAD 23. Students are expected to complete a minimum of 11 mandatory and elective competencies.
Prerequisite: CLE 15.

CLE 31 29 days 1.5 cr
Clinical Radiography III
Continuation of Clinical Education II. Film evaluation included.
Prerequisite: CLE 21.

CLE 41 40 days 1 cr
Clinical Radiography IV
Continuation of Clinical Education III. Film evaluation included.
Prerequisite: CLE 31.
CLE 45  15 Days 0.5 cr (3 equated credits)
Clinical Radiography V
Students advance sequentially in learning special imaging modalities in the hospital radiology department. Students will rotate through Computed Tomography, Magnetic Resonance Imaging, and other specialty areas.
Prerequisite: CLE 41.

CLE 51  40 days 0.5 cr
Clinical Radiography VI
CLE 51 is a fourteen week clinical experience designed to afford students the opportunity to put into practice, and demonstrate competency in the procedures learned in RAD 33 and RAD 43. Students must complete 11 mandatory and elective competencies.
Prerequisite: CLE 45.

CLE 61  29 days 1.5 cr (6 Equated Credits)
Clinical Radiography VII / Senior Seminar
Continuation of Clinical Education V. Film evaluation included.
Prerequisite: CLE 51.

RAD 11  2 lect 3 lab 3.5 cr
Fundamentals of Radiologic Sciences and Health Care
Orientation course includes history of radiology: major advances; radiologic technology as a health profession specialty; and history and organization of hospitals. Medical Ethics and Law: scope and nature of moral, legal and professional ethics. Professional guidelines of confidentiality; interpersonal relationships and medicolegal considerations. Medical Terminology: study of written and spoken language of medicine. Common terms used in diagnostic radiology education.
Prerequisite: Completion of Pre-RT Sequence.

RAD 12  1 lect 3 lab 2.5 cr
Radiographic Exposure I
Study of formation of the radiographic image with emphasis on production of quality radiographs. Topics include radiographic exposure factors; density, contrast, recorded detail and distortion; devices to improve radiographic quality such as grids, and pathology affecting radiographic exposure factors.
Prerequisite: MTH 13.
Corequisite: CLE 11.

RAD 13  2 lect 3 lab 3 cr
Radiographic Procedures I
Covers detailed information on various standard positions of structures and organs of the body; practical instruction and application in laboratory and clinical environment. Film evaluation included.
Corequisites: CLE 11, RAD 11, 15.
RAD 14   2 lect 1 cr
Recording Media and Processing
History and development of x-ray film and dark-room accessories; chemical constituents of
processing solutions and their functions; theory of the photographic process; radiographic film
artifacts and their causes.
Corequisite: RAD 12.

RAD 15   1 lect 2 lab 2 cr
Radiographic Anatomy I
Structure and function of human anatomy in all body planes with emphasis on the topographic
mode. Film evaluation included.
Prerequisite: BIO 23.
Corequisite: RAD 13.

RAD 16   1 lect 3 lab 2.5 cr
Patient Care and Pharmacology in Radiological Sciences
Provides students with basic concepts of patient care, including consideration of physical and
psychological needs of patient and family. Routine and emergency patient care procedures as
well as infection control procedures and Universal Precautions, drug interactions and
pharmacology. Lab practice is integrated to enhance the development of patient care skills.
Prerequisites: BIO 23 or equivalent; MTH 13 or equivalent.

RAD 22   1 lect 3 lab 2.5 cr
Radiographic Exposure II
Continuation of RAD 12. Examination of technique guides, technical conversions, AEC,
contrast, recorded detail distortion and effects of pathology on technique.
Prerequisite: RAD 12.
Corequisite: CLE 21.

RAD 23   2 lect 3 lab 3 cr
Radiographic Procedures II
Continuation of RAD 13. More detailed and complex positions of the structures and organs of
the body; film evaluation, practical instruction and application in the laboratory and clinical
environment.
Prerequisites: RAD 12, 13, 14, 15, 16.
Corequisite: RAD 25.

RAD 24   2 lect 2 cr
Radiation Protection
Enables student radiologic technologists to recognize the need for good radiation protection
procedures, which provide minimum exposure to patients and personnel. Topics include
interactions of radiation with matter; units and measurement of radiation; maximum permissible
dosages; and methods for minimizing operator and patient exposure.
Prerequisite: RAD 11
RAD 25   1 lect 1 cr
Radiographic Anatomy II
Continuation of RAD 15. Structures and function of human anatomy in all body planes with emphasis on the skull and spine. Film evaluation included.
Prerequisite: RAD 15.
Corequisite: BIO 24.

RAD 32   1 lect 2 lab 2 cr
Imaging Modalities
Study of various imaging systems and their application in radiography. Various recording media and techniques are discussed. Some imaging systems described are Mobile Units, Image Intensification, Video Tube and Recorders, CT, Digital Imaging, and MRI.
Prerequisites: RAD 22, 23, 25.

RAD 33   1 lect 3 lab 2 cr
Radiographic Procedures III & Cross Sectional Anatomy
Radiographic positioning of specialized procedures in radiography, the equipment, contrast media use and general indications for each examination. The cross sectional aspect of the course develops an understanding of three dimensional anatomy and the physical relationship of anatomical structures to one another. Systems studied are digestive system; urinary system; female reproduction system; biliary system; myelography; venography; arthrography; mammography and interventional radiography.
Prerequisites: RAD 23, 25, CLE 21.
Corequisites: RAD 32, 34.

RAD 34   1 lect 2 lab 2 cr
Radiographic Pathology
Survey of medical and surgical diseases to acquaint the student with changes caused by disease which relate to radiography. Emphasis on pathogenesis, signs, symptoms, diagnosis and treatment. Film evaluation included.
Prerequisites: BIO 23, 24.

RAD 42   2 lect 2 cr
Radiation Biology
Comprehensive study of the radiation effects on cells including direct and indirect action of ionizing radiation; damage induced by free radicals in DNA; interpretation of survival data; radiation genetics; radiation effects on embryos; delayed effects; radiation safety and health physics.
Corequisite: RAD 71.
RAD 43   3 lab 1 cr
Quality Assessment/Management I
Topics include concepts of a quality assurance program, state and federal regulations, sensitometric monitoring, film-screen contact, protective device integrity, radiographic illuminators, kVp accuracy, timer accuracy and mAs reciprocity. Mammography QA will be discussed.
Prerequisites: RAD 22, 32.
Corequisite: RAD 71.

RAD 71   1 lect 3 lab 2 cr
Radiation Physics
Elements of atomic and nuclear physics, interaction of radiation with matter, radioactivity, half-life, elements of health physics.
Prerequisites: MTH 13, RAD 12, 22.