Introduction to Radiologic Technology and Medical Ethics (40 hrs)
The students are given an overview of the history of radiology. The policies of the radiology program are reviewed and discussed. An understanding of the healthcare team is established. The students are made aware of the organizational structure of the radiology department and the hospital. The students are taught about accreditation, certification, licensing, professional organizations, and career advancements in radiology. This unit will emphasize the importance of professional behavior and moral and ethical responsibilities toward patients. The students are introduced to medical ethics and medico-legal principles in the healthcare field.

Elementary Radiation Protection (20 hrs.)
This course is designed to give the new student a basic understanding of radiation protection before entering the actual clinical setting. The student will be acquainted with film badges, dosimeters, and protective devices such as lead shields, gloves and aprons. This course is very basic and is designed primarily to protect the student while observing clinical procedures. The second radiation protection course will be taught in its entirety during the second semester.

Medical Terminology (30 hrs.)
For radiographers to function intelligently and interact effectively with the health professional in the clinical environment, they must be able to read, write and speak the medical language. The ability to use and understand medical terminology will enable the radiographer to select technical factors and supplement various positions to fit the needs of each patient. It is the intent of this unit to introduce the medical abbreviations, symbols, and terms which the professional will employ throughout his or her career. Upon completion of this unit, the student will be able to communicate effectively with others using medical terminology.

Human Anatomy and Physiology (75 hrs.)
No radiographer can be expected to perform examinations without detailed knowledge and understanding of the human body and its structure and function. Paramount to this task is the necessity for in-depth study of the skeletal system. In addition, the education of a radiographer cannot be considered complete until all organ systems are reviewed. This course will serve as a basis for future review of radiographic images and how changes in patient positioning effect the anatomy visualized on finished images.

Radiographic Procedures I, II, III (195 hrs.)
The emphasis of the radiographer’s time is spent in performing radiographic and fluoroscopic examinations. In order to be effective, the student must be thoroughly familiar with radiographic
procedures. This includes not only routine examination methods, but also an overview of the newer supplementary techniques such as forensic and trauma radiography, mammography, angiography, digital fluoroscopy, CT scanning, ultrasound and nuclear medicine. The students are taught how to perform radiographic examinations using laboratory simulations prior to performing actual exams on patients.

**Radiographic Film Evaluation I, II, III, IV (110 hrs.)**
Upon completion of this unit, the student will be able to recognize the different between technically diagnostic and poor quality radiographs. The student will also make adjustment in technical factors based on radiographic results. Radiographic film evaluation is the terminal point in the radiographic process, and as such, relates and integrates all other units included in this curriculum. This course is very important in the development of critical thinking and problem solving skills.

**Radiographic Physics (60 hrs.)**
Radiation in its many forms has been a natural phenomenon since the beginning of time. Life on earth has always been subjected to radiation in nature, and it has uniquely adapted to its effects. However, when biological systems are subjected to artificial radiation, the total radiation effect is increased. X-radiation is the tool of radiography, and the radiographer must be constantly aware of the potential hazards inherent with each exposure. It is the intent of this unit to introduce how radiation transports and transfers energy, the mechanics of radiation’s interaction with matter, and how radiation is measured. Upon completion of this unit, the student will respect the public’s right to minimum exposure through knowledge of the effects of radiation.

**Patient Care & Pharmacology (40 hrs)**
The art of effective communication and body language is discussed. The importance of medical asepsis in the radiology department is realized. The students learn how to admit a patient to the radiology department and how to properly move and transfer patients. Vital signs and oxygen administration are learned and practiced. 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, proper skin preparation, and venipuncture are learned. 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.

**Radiographic Processing (40 hrs.)**
This unit should include discussions on radiographic film characteristics, storage and handling of film, processing room design and function, chemistry of contemporary processing systems, and silver reclamation. Laboratory experiments to investigate and demonstrate the phenomena explained during class sessions are performed. The specific instructional intent for this unit is to provide each participant with the knowledge to maintain and/or troubleshoot malfunctions found in processing systems. This unit will also introduce the trend toward digital acquisition and storage of images.
Radiographic Exposure (40 hrs.)
Upon completion of this unit, the student will employ technical factors and accessory devices such as grids or screens to yield the optimum radiographic results. It is also imperative that the student use effective radiation protection methods, such as beam restricting devices and shielding. These practices not only limit radiation exposure, but also improve the quality of the radiographic image transfers energy, the mechanics of radiation’s interaction with matter, and how radiation is measured. Upon completion of this unit, the student will respect the public’s right to minimum exposure through knowledge of the effects of radiation.

Radiation Protection II (30 hrs.)
This unit is designed to provide the participant with knowledge pertaining to the area of radiation protection. Principles and concepts explaining basic interaction of radiation with matter, the effect of exposure factors on radiation dose, biological effects, units of measurement, maximum permissible dose, and exposure monitoring are also included. Laboratory demonstrations and experiments will help to illustrate key points. The intent of this course is to instill in the radiographer a constant awareness of radiation, its effects and the proper application of radiation limiting devices and techniques.

Radiographic Pathology (30 hrs)
This unit will acquaint the student with various pathologic conditions of the body and their impact upon the radiographic process. Basic knowledge of the disease process will enable the student to produce diagnostic radiographs and ensure effective patient care. The intent of the unit is to assist the student in understanding evaluating various pathologic and disease entities.

Radiation Biology (45 hrs.)
In recognition of the professional and moral obligation the radiographer has for practicing radiation safety measures, the specific intent of this unit is to provide each participant with awareness and knowledge relating to the effects of ionizing radiation on biologic systems. Known radiation dangers, public accountability, and increased government intervention dictate that knowledge in this area is imperative for the practicing radiographer.

Department Administrative Technique (20 hrs.)
This is a capstone course that will review major points that was covered during the student’s didactic & clinical education. The focus of this course will be resume preparation, interview skills and mock Registry exams. The intent of this course is to prepare the student for the ARRT exam and for employment after graduation.

Clinical Experience
The clinical experience is where the student has the opportunity to apply what has been learned in the Radiographic Procedures classes. Students will be expected to perform exams on patients after they have been covered in the didactic portion of the training. The student will use a step method where they will practice, perform preliminary competencies, and final competencies at the end of each clinical experience.