

COURSE: INTRODUCTION TO RADIOLOGIC TECHNOLOGY AND RADIATION PROTECTION

This unit is designed to acquaint the new student with the goals, philosophies, and organization of the radiography program and the radiology department including radiation safety. An appreciation of radiologic technology will be established through an understanding of medical history, the evaluations of radiologic technology and the professional organizations. The knowledge of career and socio-economic advancements within radiologic technology will enable the student to establish and maintain high goals. The general intent is to set the pace for the students' professional growth in radiologic technology.

COURSE: PHARMACOLOGY

Advances in medical imaging have created tremendous changes in the skill and the knowledge required of the radiographer today. This course is designed to enhance the knowledge base of the student in the area of pharmacology and drug therapy. It is designed to present basic knowledge, and prepare the student for the health professional's role in the assessment, planning, implementation and administration of various drugs. This course educates the radiographer of the classifications of contrast medias used in medical imaging along with an understanding of their interactions, the correct means of administration, and indications. All technologists must have a thorough understanding of contraindications for contrast medias usage and identify those exams with which these contraindications exist. Venipuncture technique along with vascular anatomy is reviewed in this course, along with pharmacology, as this information is an important chapter in the Patient Care curriculum. Legal and ethical issues are also visited.

COURSE: PEDIATRICS

Understanding children and acknowledging the need for an approach on a "different" level is the essential ingredient for the success of radiographing children. Two important areas covered during this course are pediatric communication skills and pediatric immobilization. Although pediatric imaging and adult imaging have many similarities in positioning basic projections, the radiographer must adapt and practice the following; an open mind, patience, creativity, willingness to learn, and the ability to understand a child's behavior as it relates to age. In addition, this course will prepare the student for important imaging protocol such as radiation protection practices, patient motion control, and child contrast media dosages.

COURSE: ANATOMY AND PHYSIOLOGY I AND II

Radiographers are expected to perform examinations with detailed knowledge and understanding of the human body, its structure and its function. The radiographer must have an in depth knowledge of the skeletal system, along with the other ten systems of the human body, and understand how they are interrelated. The function of the parts and the body as a whole play an important role in the radiographic procedures and the resultant images. This supports the need for comprehensive study of both anatomy and physiology.

COURSE: RADIOGRAPHIC PROCEDURES AND POSITIONING I

Students learn the basic fundamentals and advanced methods of radiographic positioning of the appendicular skeleton, the thoracic and the abdominal contents, as well as the vertebral column. This course is designed to assist the student to acquire the skill in positioning the various parts of the body for the proper demonstration of the structure of interest. The student will learn the many different projections (views) that are required in radiographing the many body parts of the patient. A good understanding of Positioning and Exposure is necessary to produce diagnostic films for interpretation by a Radiologist.

COURSE: RADIOGRAPHIC PROCEDURES AND POSITIONING II

This course is an important element in the radiology students success in positioning of headwork. The student shall become familiar with lines, planes and topographical landmarks that are used to position the skull, facial bones, mandible, orbits, TMJ's and mastoids air cells. Along with an intense curriculum of positioning of the head, the student shall progress through more detail imaging of systems to include: the cardiovascular system, the

digestive/biliary system, the urinary system, the respiratory system, the reproductive system, arthrography, long bone measurement, and mammography. Each section includes review of important anatomy along with detail information in conducting the procedure.

COURSE: RADIOGRAPHIC PROCEDURES AND POSITIONING III

This course is designed to introduce student radiographers to areas of advanced imaging that is used more routinely in radiology departments today. Throughout this course, students learn techniques used to perform venipuncture, Myelography, diskography, angiography, CT, MRI, digital imaging, PET scans, as well as other specialized procedures. In addition, a review of examinations such as orthoroentgenography, arthrography and tomography are included.

COURSE: PRINCIPLES OF RADIATION PROTECTION

This unit is designed to provide the participant with knowledge pertaining to the area of radiation protection. Principles and concepts explaining the basic interaction of radiation with matter, effects, units of measurements, dose equivalents, and exposure monitoring shall be included. The intent of this course is to instill an awareness of good radiation protection standards and to create positive behaviors exhibited by the radiographer. In addition, a thorough understanding of dosimetry reporting along with proper usage of radiation limiting devices and radiation exposure techniques shall be instructed.

COURSE: METHODS OF PATIENT CARE

This course is designed to prepare the student for a professional career in health care, with emphasis on patient care skills, technical skills, as well as education of professionalism in the field of radiologic technology. This course also includes education in venipuncture as well as pharmacology for the radiographer.

COURSE: SPECIALIZED IMAGING

This course is designed to introduce the student radiographer to advanced special imaging procedures. Sterile techniques, specialized equipment and supplies, along with patient care methods for these special exams are reviewed. Arteriography, Venography, Myelography, CT, MRI, U/S, PET, Cardiac Catheterization, N/M, PET, and Bone Densitometry are examples of the procedures covered during this course. The intent of this course is to allow the student the opportunities to explore beyond entry level medical imaging into the multiple areas offered in the field today.

COURSE: MEDICAL ETHICS AND LAW

This unit will provide the student with respect for interpersonal relationships, along with moral and ethical responsibilities to increase effective communication and empathy for the patient. The medico legal considerations will assist the student regarding ethic principles and legal responsibilities. This course will introduce the following documents to the new student: The Patient Bill of Rights, The Code of Ethics for RT's and Principles of Professional Conduct for Radiologic Technologists.

COURSE: PRINCIPLES OF RADIOGRAPHIC EXPOSURE I AND II

Upon completion of this unit, the student will employ technical factors (accessory devices such as grids, screens, etc.) Yielding the optimum radiographic results. It is also imperative that the student utilize effective radiation protection methods such as beam restricting devices and shielding in an attempt to not only limit radiation exposure, but also to improve the quality of the image.

COURSE: RADIOGRAPHIC PROCESSING AND DARKROOM TECHNIQUE

This course includes discussions of radiographic film characteristics, film artifacts, film storage, film handling, film holders, processing room design and function, methods, principles and chemistry of contemporary processing system and silver reclamation.

COURSE: RADIOLOGIC PHYSIC I AND II

Radiation in its many forms has been a natural phenomenon since the beginning of time. Life on earth has always been subjected to these radiations, and in natural quantities, uniquely adapted to their effects. When biological organisms are subjected to radiation, the effects can be minimal to substantial. X-radiation is the tool of radiography, and therefore, the radiographer must possess the knowledge of the potential hazards inherent in each exposure. It is the intent of this course to introduce the understanding of different energies including the atomic level, the production of radiation, and the transformations that occur, along with the concepts of particular laws of science which govern the world of physics. In addition, units of measuring energies as well as the equipment involved in its production shall be examined. Upon completion of this unit, the radiology student shall understand the importance of keeping exposure to a minimum through knowledge of radiation energies, equipment, and safety features.

COURSE: RADIATION BIOLOGY

In recognition of the professional obligation the radiographer has for practicing radiation safety measures, the specific intent of this unit to provide each participant with awareness and knowledge relating to the effects of ionizing radiation on the biological system. Known radiation dangers, public accountability, and increased government intervention, dictate that the radiographer have a strong understanding of these principles in order to practice the art and science of radiology.

COURSE: MEDICAL TERMINOLOGY

For radiographers to effectively function in the clinical environment, they must be capable of reading, writing and speaking medical language. Effective communication will enhance the radiographers' ability to work in the health care environment, providing quality of care to patients, while efficiently communicating with others that they will encounter while in the clinical setting. The intent of this unit is to introduce medical abbreviations, symbols, and terminology in which the RT will encounter during their professional career. Upon completion, the student will be capable of recognizing, interpreting, and communicating effectively, as they apply their clinical skills.

COURSE: RADIOGRAPHIC PATHOLOGY

This unit will acquaint the student with various pathologic conditions of the body and their impact on the radiographic process. The basic knowledge of the disease processes will enable the student to produce optimum diagnostic radiographs and insure effective patient care to the seriously ill or trauma patient. The intent of this unit is to assist the student in understanding and evaluating various pathologic and disease entities.

COURSE: QUALITY ASSURANCE

Students will acquire an understanding of the basic elements of a quality assurance program along with techniques and testing procedures necessary to successfully perform such tasks. Data collection of the quality of the equipment used, as well as the performance of the radiographers' skills, is an ongoing assessment in which students are required to participate during training. Assessment forms for tracking of repeat rates along with quality checks of equipment are utilized by all students to foster an overall desire of quality performance and care.

COURSE: COMPUTER LITERACY

This course is designed to provide the student radiographer with an understanding of computer technology used in the operation of medical imaging today. Basic computer language along with specific terms used in radiology will help the student understand the principles and the operation of imaging equipment found in a typical radiology department. Modalities such as CT, MRI, Digital Imaging, Computed Radiography, along with U/S are included in this computer instruction.

COURSE: RADIOGRAPHIC EVALUATION

This course is designed to assure the student's ability to evaluate each image from all radiographic procedures. The intent is to adequately prepare the student with strong film critique skills. This course is a complete review of radiography of all systems, with emphasis on identification of anatomy, quality positioning assessment, radiation protection utilization, and proper film identification. In addition, the student must identify normal from abnormal anatomy. An audiovisual series is including in this lecture covering the importance of understanding and identifying artifacts on images.

COURSE: REGISTRY REVIEW

This course is designed to aid the student in preparing for the ARRT registry through review of material previously studied. It is the intent that information for this review shall be attained throughout this program, but also with the aid of serial testing, registry review books, and with computer-assisted testing (CAD).

COURSE: CLINICAL EDUCATION I

The student is introduced and becomes familiar with the clinical setting during their first semester. The student will begin their participation in the Medical Imaging department in a limited capacity as their initial clinical rotations will primarily involve observation of procedures and tasks. Following successful completion of didactic material and laboratory evaluation, the student will gradually begin to perform some exams and duties under the direct supervision of a technologist. This progressive approach is a necessary feature of developing competency based clinical education for the student.

COURSE: CLINICAL EDUCATION II

This is a continuation of Clinical I and the student is now expected to demonstrate a higher level of participation in the Medical Imaging Department through the routine performance of procedures and tasks. Following successful completion of didactic material and laboratory evaluation, the student begins to perform more difficult exams under the direct supervision of a technologist. The student will also begin clinical competency testing to establish proficiency for certain procedures. This progressive approach is a necessary feature of developing competency based clinical education for the student. Following successful completion of a clinical competency evaluation for an exam, the student may begin performing these procedures with indirect supervision of a technologist.

COURSE: CLINICAL EDUCATION III

This is a continuation of Clinical I and II in which the student is expected to demonstrate a more advanced level of participation in the Medical Imaging department. The student continues the clinical competency testing process, and the successful passing of these tests will allow them to perform many procedures under indirect supervision of a technologist.

COURSE: CLINICAL EDUCATION IV

This is a continuation of Clinical I, II, and III. The student will begin to develop independent decision-making skills to prepare them for the roles of a technologist. The student continues the clinical competency process and should now be performing many exams with indirect supervision.

COURSE: CLINICAL EDUCATION V

This is a continuation of Clinical I, II, III, and IV. The student should be developing and establishing their decision making skills to a high level. The student will be performing most exams with indirect supervision and develop a degree of independence.

COURSE: CLINICAL EDUCATION VI

This is the final section of clinical education. The student will complete the clinical competency process, all required clinical competency exams and the terminal competency process. The student will fine-tune all of the skills to prepare to enter the work force as an entry-level technologist.