UTAH SYSTEM OF HIGHER EDUCATION

Utah System of Higher Education
Radiography Technology
FY2024 / 42 Credits (1600 Clock-Hours)

Foundational Courses

Aligned Courses

BLSH 1000 AHA Basic Life Support for Healthcare Providers **0 Credits / 5 Clock-Hours**

The Basic Life Support (BLS) Course for Health Care Providers is designed to provide professionals with the necessary skills to keep people alive until they can be brought to a hospital or be treated with more advanced lifesaving measures.
This course covers: adult and pediatric CPR, two-rescuer scenarios and use of the bag-valve masks, foreign-body airway obstruction, automated external defibrillation, special resuscitation situations, stroke and cardiac arrest, and other cardiopulmonary emergencies.

Objectives:
• Recognize several life-threatening emergencies.
• Correctly perform CPR.
• Correctly use an AED.
• Relieve choking in a safe, timely and effective manner.

TERT 1020 Rad. Anatomy and Procedures **3 Credits / 90 Clock-Hours**

This course is designed to provide students with the knowledge and skills to take x-ray images of the chest, abdomen, upper limb, and shoulder. During this course students will practice taking x-rays, identifying anatomy and topical landmarks, and how to position the patient and the x-ray tube for each exam. Students will practice using post processing techniques when completing the entire process of start to finish when taking an x-ray.

Objectives:
• Demonstrate their anatomy and landmark knowledge of the chest, abdomen, upper limb, humerus, shoulder girdle.
• Simulate the routine and special positions and projections for the chest, abdomen, upper limb, and shoulder procedures in both the lecture and lab settings.
• Describe skeletal trauma and fracture terminology related to the chest, abdomen, upper limb, and shoulder girdle.

TERT 1030 Radiographic Imaging and Exposure Techniques **3 Credits / 90 Clock-Hours**

This course is designed to introduce and teach students about x-ray imaging and exposure techniques. In this course, students will understand how x-rays are produced, the components of an x-ray tube, what the core techniques are, and how they produce a visible image. Students will also learn the basics of digital imaging and how to use the post processing techniques properly.

Objectives:
• Describe the components of an x-ray tube, beam and how x-rays are produced.
• Explain the properties and characteristics of x-rays.
• Identify the different types of image receptors and explain their propter use.
• Use the key features in the digital image process and in post processing.

TERT 1050 Patient Care **1 Credit / 30 Clock-Hours**

This course is designed to provide students with the knowledge and skills that are necessary to perform exceptional care while working with patients in their clinical and job setting. Students will learn how to properly transfer patients, perform correct sterile techniques, communicate effectively, and use preventative measures for infectious diseases.

Objectives:
• List what the radiography technologist's role is and what standards they are expected to abide by.
• Maintain a professional attitude toward various patient populations with an ability to meet their individual needs including those of diverse ethnicity, religion, disability, gender, age, and sexual orientation.
• Use safety precautions and proper infection control procedures.
• Assess the patient's needs and demonstrate proper transportation techniques to the patient if needed.
• Describe sterile techniques that they will use during procedures in and out of surgery.

TERT 1140 Rad Protection and Radiobiology **1 Credit / 30 Clock-Hours**

This course is designed to teach students about radiation protection methods and the effects that can happen from radiation exposure. Students will learn about beam filtration, beam restrictors, and patient consideration. Students will learn about the ALARA principles and the importance of time, distance, and shielding. Students will learn about dosimeters and how they monitor radiation levels. Students will also learn about the biological effects of radiation and how they can affect the body.

Objectives:
• Explain the ALARA principle and its relationship to time, distance, and shielding.
• Identify the biological effects that can happen due to radiation.
• Explain the difference between short- and long-term somatic effects.
• Describe the methods of filtration, beam restriction, and patient consideration.
• Demonstrate proper radiation protection techniques.

TERT 1070 Rad. Clinicals I **6 Credits / 270 Clock-Hours**

This course is designed for students to take their knowledge of what they learned in the classroom and laboratory and apply it to their clinical sites. Students will position patients, use proper radiation protection techniques, and take x-rays under the supervision of the x-ray department staff. Students will learn the job of an X-ray technologist through real world experiences.

Objectives:
• Use proper radiation protection techniques during each x-ray exam.
• Execute x-ray imaging exams from start to finish under the direction of the x-ray department staff.
• Select technical factors to produce quality diagnostic images with the mindset of ALARA.
• Pass off their X-ray Competencies for Chest, Abdomen, Upper Limb, and Shoulder Girdle.

TERT 1110 Radiology Physics **1 Credit / 30 Clock-Hours**

This course is designed to teach students about the physics of x-ray production. Students will learn about the characteristics of an x-ray beam, how it is created, and how they travel. Students will learn the different ways that X-ray photons interact with matter and how it can affect atoms and cells. Students will also learn how electrical circuits work and the different types of circuits used in the x-ray process.

Objectives:
• Explain the difference between AC and DC circuits.
• Identify and describe each part of the x-ray circuit and what it does.
• Demonstrate the creation process of the x-ray beam and how it travels through the x-ray tube.
• Describe the different ways that x-rays photons can interact with matter and the cause.

TERT 1120 Rad. Anatomy and Procedures II **3 Credits / 90 Clock-Hours**

This course is designed to provide students with the knowledge and skills to take x-ray images of the lower extremities, spine, pelvis, and ribs along with practicing the exams from the semester before. During this course students will practice taking x-rays, identifying anatomy and topical landmarks, and how to position the patient and the x-ray tube for each exam. Students will practice using post processing techniques when completing the entire process of start to finish when taking an x-ray.

Objectives:
• Demonstrate their anatomy and landmark knowledge of the lower extremities, spine, pelvis, and ribs.
• Describe skeletal trauma and fracture terminology related to the lower extremities, spine, pelvis, and ribs.
• Explain the routine and special positions and projections for the lower extremities, spine, pelvis, and ribs procedures in the lab setting.

TERT 1130 Radiographic Imaging II **2 Credits / 60 Clock-Hours**

This course is designed to build upon the student's knowledge of imaging and exposure and enhance their skills as a student tech. Students will build upon their knowledge of how x-rays are created and manipulated with certain exposure values. Students will gain a better understanding of exposure techniques, digital imaging processes, automatic exposure control, and other post processing techniques. Students will practice these techniques during labs and will enhance their imaging skills.

Objectives:
• Explain scatter radiation and the purpose of grids.
• Describe the process of using AEC along with manual techniques and how it benefits their patient.
• Demonstrate proficiency in the different imaging techniques and manipulation of techniques increase during time spent in the lab.
• Use the specific formulas associated with image quality to make their images better.

TERT 1170 Rad. Clinicals II **6 Credits / 270 Clock-Hours**

This course is designed for students to take their knowledge of what they have learned and are currently learning in the classroom and laboratory and apply it to their clinical sites. Students will position patients, use proper radiation protection techniques, and take x-rays under the supervision of the x-ray department staff. Students will also participate in other imaging exams, like fluoroscopy, surgery c-arm exams, and dexa scans. Students will learn the job of an X-ray technologist through real world experiences.

Objectives:
• Use proper radiation protection techniques during each x-ray exam.
• Execute x-ray imaging exams from start to finish under the direction of the x-ray department staff.
• Select technical factors to produce quality diagnostic images with the mindset of ALARA.
• Pass off their X-ray Competencies for lower extremities, spine, pelvis, and ribs.

TERT 2010 Rad. and Pediatric Pathology **1 Credit / 30 Clock-Hours**

This course is designed to teach students about the different pathology cases they may see during their clinicals. Students will learn how to help pediatric patients through their entire x-ray or imaging exam. Students will be able to identify different pathologies they will see on their imaging rotations.

Objectives:
• Describe techniques to help their pediatric patients through their exam.
• Demonstrate their knowledge of different pathology cases.
• Identify different pediatric and adult pathologies they may see in clinicals and what they learn in class.

TERT 2020 Rad. Anatomy and Procedures III **2 Credits / 60 Clock-Hours**

This course is designed to provide students with the knowledge and skills to take x-ray images of the upper and lower GI tract, urinary tract and biliary tract along with the skull, sinus, facial bones, and trauma x-ray views. During this course, students will practice taking x-rays, identifying anatomy and topical landmarks, and using the x-ray tube with correct post processing techniques.

Objectives:
• Demonstrate their anatomy and landmark knowledge of the upper and lower GI tract, urinary tract and biliary tract along with the Skull, Sinus, Facial Bones, and trauma x-ray views.
• Explain the routine and special positions and projections for the Skull, Sinus, Facial Bones procedures in the lab setting.
• Describe skeletal trauma and fracture terminology related to the Skull, Sinus, and Facial Bones.

TERT 2030 Alternate Modality and Sectional Anatomy **2 Credits / 60 Clock-Hours**

This course is designed to teach students about the different imaging modalities in the field of radiology and to give students a base understanding of cross section anatomy. Students will be taught by imaging professionals who have specialized in a certain modality. Students will be able to gain more information about what they want to do in the future. Students will also be able to identify different sections of cross-sectional anatomy.

Objectives:
• Explain the difference between each imaging modality.
• Describe sectional anatomy terms.
• Identify different cross sections of the body.

TERT 2070 Rad. Clinicals III **6 Credits / 270 Clock-Hours**

This course is designed for students to take their knowledge of what they have learned and are currently learning in the classroom and laboratory and apply it to their clinical sites. Students will position patients, use proper radiation protection techniques, and take x-rays under the supervision of the x-ray department staff. Students will also participate in other imaging exams, like fluoroscopy, surgery c-arm exams, and dexa scans. Students will learn the job of an X-ray technologist through real world experiences.

Objectives:
• Use proper radiation protection techniques during each x-ray exam.
• Execute x-ray imaging exams from start to finish under the direction of the x-ray department staff.
• Select technical factors to produce quality diagnostic images with the mindset of ALARA.
• Pass off their Imaging Competencies for upper and lower GI tract, urinary tract and biliary tract along with the skull, sinus, facial bones, and trauma x-ray views.

TERT 2150 Registry Review (online) **3 Credits / 90 Clock-Hours**

This course is designed to assist students in studying for their ARRT national board exams that they will take at the end of the program. This course will provide students with the resources, help aids, and practice exams they need to study for their national boards.

Objectives:
• Demonstrate their knowledge of the program based on their practice board exams.
• Describe the format of the ARRT board exam.
• Explain the main principles of radiography technology.
• Demonstrate their knowledge of patient protection, patient positioning, and patient care.

TERT 2170 Rad. Clinicals IV **2 Credits / 125 Clock-Hours**

This course is designed for students to take their knowledge of what they have learned and are currently learning in the classroom and laboratory and apply it to their clinical sites. Students will position patients, use proper radiation protection techniques, and take x-rays under the supervision of the x-ray department staff. Students will also participate in other imaging exams, like fluoroscopy, surgery c-arm exams, and dexa scans. Students will learn the job of an X-ray technologist through real world experiences.

Objectives:
• Use proper radiation protection techniques during each x-ray exam.
• Execute x-ray imaging exams from start to finish under the direction of the x-ray department staff.
• Select technical factors to produce quality diagnostic images with the mindset of ALARA.
• Pass off their Imaging Competencies for all exams they have learned throughout the program.