Radiography
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Radiographers are medical professionals responsible for performing diagnostic x-ray examinations using ionizing radiation.

The Ellis College of Arts and Sciences, in cooperation Baptist Health College Little Rock, offers a Bachelor of Science degree in radiography. Two years of the program are completed on the Henderson campus. The third and fourth years are completed at the Baptist Health College in Little Rock or at an approved hospital-associated teaching laboratory.

In the second year of study at HSU students can apply to receive an associate of science degree: radiography tract. In a student's final year of study at Baptist, they are eligible to apply for graduations from HSU with a B.S. degree and for the various certificating examinations.

Associate of Science Degree: Radiography Tract

The associate of science degree: radiography tract is designed to prepare students for entrance into the professional/upper level course work required for a career in radiography. The University's liberal core requirements will be met during the first two years of this program. Required courses in science will also be completed. At the end of the second year of this program students can be awarded the Associate of Science: radiography tract. In the second year they will also be able to apply for entrance into the professional radiography program.

Degree Requirements:

1. Completion of a minimum of 60 semester hours (described below) is necessary for application to the professional curriculum. The student must apply and be admitted to Henderson prior to enrolling in the professional curriculum in radiography. Transfer students must complete at least 30 hours through Henderson State University. All general education course requirements must be completed by the end of the Summer I term prior to enrollment in the affiliate professional program which begins each July. Students must present a statement of eligibility to apply to the professional program, signed by the University radiography advisor.

2. Acceptance into the clinical program in radiography at Baptist Health College Little Rock.

3. Completion of the clinical curriculum with a minimum GPA of 2.00.

On-Campus Curriculum **Hours**

A. Specific General Education and Other Required Courses:
BIO 1013/1021.....4
BIO 2174/2184 8
PHY 2034.....4
CSC 2003 3
PHI 3113 3
Biology, Chemistry, or Physics elective 4
Not to include CHM1004 or PHY1024

B. Liberal Arts Core Component remaining.....34
Highly recommended – PSY1013 and upper level psychology course
Total Hours 60

Clinical Curriculum at Baptist Health College LR
Junior Year: Fall Semester (21 hours)

RAD	3001	Introduction to Radiography
RAD	3068	Clinical Education I
RAD	3081	Image Analysis I
RAD	3321	Spiritual Perspectives in Healthcare
RAD	3072	Patient Care in Radiologic Sciences
RAD	3021	Medical Terminology
RAD	3042	Radiographic Procedures I (Contrast Media)
RAD	3051	Medical Ethics and Law

RAD	3103	Radiographic Procedures II
RAD	3151	Radiation Production and Characteristics I

Junior Year: Spring Semester (20 hours)

RAD	3311	Advanced Patient Care in the Radiological Sciences
RAD	3143	Radiographic Procedures III (Routine/Pediatrics) .....
RAD	3119	Clinical Education II
RAD	3121	Image Analysis II
RAD	2202	Radiation Production and Characteristics II
RAD	3092	Digital/Film Image Acquisition and Display I
RAD	3211	Radiographic Procedures IV (Special Procedures) (No Degree Credit)
RAD	3251	Imaging Equipment (CT, Ultrasound, Nuclear Medicine, MRI)

Senior Year

Senior Year: Fall Semester (19 hours)

RAD	3191	Image Analysis III
RAD	3169	Clinical Education III
RAD	4133	Digital/Film Image Acquisition and Display II
RAD	4282	Radiographic Pathology
RAD	4291	Introduction to Quality Assurance
RAD	4243	Radiographic Procedures V

Senior Year Spring Semester (16 hours)

RAD	4231	Image Analysis IV
RAD	4182	Principles of Radiation Protection
RAD	4171	Principles of Radiation Biology
RAD	3229	Clinical Education IV
RAD	4273	Senior Seminars (Review)

Total Hours 76

Courses in Radiography

RAD 3001. Introduction to Radiography. The student is oriented to the structure, policies, and procedures of the school, Radiology Department, and hospital. A brief history of medicine and Radiology is reviewed. The student is acquainted with professional organizations, licensure and career opportunities. The basic principles of radiation protection are introduced. The course includes the following number of contact hours: Theory - 23 contact hours.

RAD 3321. Spiritual Perspectives. The course provides a holistic, Christian-based approach in creating awareness and understanding about 1) one's own belief system, 2) the spiritual needs of patients, 3) methodologies of spiritual care for pateints, and 4) world religions and religious practices specifically as they relate to the delivery of healthcare. The course includes the following number of contact hours: Theory - 15 contact hours.

RAD 3021. Medical Terminology. To work effectively in Radiology, it is necessary to understand the language of medicine. The student learns the word-building system of medical terminology; prefixes, suffixes and root or stem words relating to the body and its systems. Terms, abbreviations and symbols especially pertinent to medical imaging are studied with emphasis on understanding the meaning of such words and their proper usage in medicine. The course includes the following number of contact hours: Theory - 22 contact hours.

RAD 3042. Radiographic Procedures I (Contrast Media). This course is the first in a sequence of courses that instructs the student in the radiographic positioning of the anatomic structures and organs of the body, correlated with Human Structure and Function. In addition to the basic radiographic positions and procedures, special or supplementary radiographic views and studies using contrast media are also discussed. The course includes the following number of contact hours: Theory - 40 contact hours.

RAD 3051. Medical Ethics and Law. Content is designed to provide a fundamental background in ethics. The historical and philosophical base of ethics, as well as the elements of ethical behavior, are discussed. The student will examine a variety of ethical issues and dilemmas found in clinical practice; an introduction to legal terminology, concepts and principles will also be presented. Topics include misconduct, malpractice, legal and professional standards and the ASRT scope of practice. The importance of proper documentation and informed consent is emphasized. The course includes the following number of contact hours: Theory - 15 contact hours.

RAD 3068. Clinical Education I. There are a total of four (4) clinical categories or practicums in this clinical education program. All clinical experiences correlate with the student's academic education. Clinical practice experiences and competencies are evaluated in this course. It is designed to allow the student to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated. All clinical practice experiences are designed to give the student the ability to provide excellent patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. The course includes the following number of contact hours: Clinical Laboratory - 376 contact hours.

RAD 3072. Patient Care in the Radiological Sciences. A study of the concepts of care in radiology, including both physical and psychological needs of the patient and family. Professional issues, communication, routine and emergency patient care procedures are described, as well as infection control procedures using standard precautions. Students will also learn how to accurately measure and monitor a patient's vital signs. Imaging of pediatric and geriatric patients is also discussed. The newly enrolled student radiographer is required to document they have completed the "Healthcare Provider CPR Course" at American Heart Association Standards, before school starts. This requirement is to be completed **at the student's expense**. The student must re-certify prior to graduation at their **own expense** to be job ready. The course includes the following number of contact hours. Theory - 30 contact hours.

RAD 3311. Advanced Patient Care in Radiologic Sciences. This is a continuation of RAD 3xx2. Content is designed to further educate the student on advanced patient care concepts to include: urologic and gastrointestinal procedures, aseptic technique, pharmacology, drug administration and basic electrocardiogram monitoring. The course includes the following number of contact hours. Theory - 12 contact hours.

RAD 3081. Image Analysis I. There are a series of four Image Analysis courses designed to correlate with clinical and academics. Content is designed to provide a basis for analyzing radiographic images. Included are the importance of minimum imaging standards, discussion of a problem-solving technique for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. The course includes the following number of contact hours: Theory - 22 contact hours.

RAD 3092. Digital/Film Image Acquisition and Display I. Content is designed to impart an understanding of the components, principles and operation of digital and film based imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Guidelines for selecting exposure factors and evaluating images within a digital system assist students to bridge between film-based and digital imaging systems. Principles of digital system quality assurance and maintenance are presented. The course includes the following number of contact hours: Theory - 40 contact hours.

RAD 3103. Radiographic Procedures II. This course is a continuation of course RAD 3042 with an emphasis on basic radiographic positioning of the lower and upper anatomic structures, correlated with Human Structure and Function. The course includes the following number of contact hours: Theory - 45 contact hours.

RAD 3119. Clinical Education II. This is a continuation of course RAD 3068. Clinical practice experiences and competencies are evaluated in this course. It is designed to allow the student to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated. All clinical practice experiences are designed to give the student the ability to provide excellent patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. The course includes the following number of contact hours: Clinical Laboratory - 420 contact hours.

RAD 3121. Image Analysis II. A continuation of course RAD 3081. Content is designed to provide a basis for analyzing radiographic images. Included are the importance of minimum imaging standards, discussion of a problem-solving technique for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. The course includes the following number of contact hours: Theory - 22 contact hours.

RAD 4133. Digital/Film Image Acquisition and Display II. A continuation of course RAD 3092. Content is designed to impart an understanding of the components, principles and operation of digital and film based imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Guidelines for selecting exposure factors and evaluating images within a digital system assist students to bridge between film-based and digital imaging systems. Principles of digital system quality assurance and maintenance are presented. The course includes the following number of contact hours: Theory - 50 contact hours.

RAD 3143. Radiographic Procedures III (Routine and Pediatrics). A continuation of course RAD 3103 (Routine and Pediatrics) to include the positioning of bones of the spine and skull. A study of special problems in radiography of children is emphasized and routine positioning for radiography of children is taught. The course includes the following number of contact hours: Theory - 50 contact hours.

RAD 3151. Radiation Production and Characteristics I. A study of the general theories of physics at atomic and subatomic levels, electrostatics and electronics related to radiographic practice, x-ray tubes and transforms, circuits and equipment. The production of x-radiation, its properties, measurements and interaction with matter are studied. The course includes the following number of contact hours: Theory - 25 contact hours.

RAD 3169. Clinical Education III. This is a continuation of course RAD 3119. Clinical practice experiences and competencies are evaluated in this course. It is designed to allow the student to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated. All clinical practice experiences are designed to give the student the ability to provide excellent patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. The course includes the following number of contact hours: Clinical Laboratory- 416 contact hours

RAD 4171. Principles of Radiation Biology. A study of the effects of ionizing radiations on living tissues. Included are discussions on relative sensitivity and resistance of organ systems, cellular and systematic response to radiation, and in-utero response to radiation. The acute and latent effects of radiation are also discussed. The course includes the following number of contact hours: Theory - 20 contact hours.

RAD 4182. Principles of Radiation Protection. A study of the interactions of radiation with matter, its biological effects, and the need for protection. Methods for minimizing exposure to patients, maximum permissible dose equivalents, personnel monitoring, shielding, and methods of measuring ionizing radiation are discussed. The course includes the following number of contact hours: Theory - 30 contact hours.

RAD 3191. Image Analysis III. A continuation of course RAD 3121. Content is designed to provide a basis for analyzing radiographic images. Included are the importance of minimum imaging standards, discussion of a problem-solving technique for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. The course includes the following number of contact hours: Theory - 22 contact hours.

RAD 2202. Radiation Production and Characteristics II. A continuation of course RAD 3151 with an emphasis on x-ray tubes, transformers, rectifiers, circuits and equipment types. The course includes the following number of contact hours: Theory - 30 contact hours.

RAD 3211. Radiographic Procedures IV (Special Procedures). A continuation of course RAD 3143 introducing the student to specialized procedures. The course includes the following number of contact hours: Theory - 20 contact hours.

RAD 3229. Clinical Education IV. This is a continuation of course RAD 3169. Clinical practice experiences and competencies are evaluated in this course. It is designed to allow the student to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated. All clinical practice experiences are designed to give the student the ability to provide excellent patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. The course includes the following number of contact hours: Clinical Laboratory - 420 contact hours.

RAD 4231. Image Analysis IV. A continuation of course RAD 3191. Content is designed to provide a basis for analyzing radiographic images. Included are the importance of minimum imaging standards, discussion of a problem-solving technique for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. The course includes the following number of contact hours: Theory - 22 contact hours.

RAD 4243. Radiographic Procedures V. A continuation of course RAD 3211. Content is designed to emphasize certain special views used to demonstrate specific anatomical parts which are difficult to see in routine positioning. Daily oral quizzes are given. This course also provides a review of routine positioning. Students will review body rotations, central ray locations, tube tilts, anatomy, and structures shown. The course includes the following number of contact hours: Theory - 57 contact hours.

RAD 3251. Imaging Equipment (Ultrasound, Nuclear Medicine, MRI). Introduces the student to various methods of recording images, fundamentals of maintenance and relates principles of diagnostic imaging to the process of image production and the specific equipment it requires. Content includes image intensification, magnification, tomography and digital. The student is acquainted with advanced imaging techniques, including Computed Tomography, Ultrasound, Nuclear Medicine and Magnetic Resonance Imaging**.** The course includes the following number of contact hours: Theory - 16 contact hours.

RAD 4273. Senior Seminar (Review). Review sessions in those courses deemed critical for the Registry examination. Students are also given simulated Registry examinations to aid in preparation and familiarization with conditions under which the Registry is given. Computer review is also scheduled during this time. The course includes the following number of contact hours: Theory - 57 contact hours.

RAD 4282. Radiographic Pathology. An introduction to the concepts of disease. Trauma/physical injury, the systemic classification of disease, and repair and replacement of tissue are discussed. The course includes the following number of contact hours: Theory- 40 contact hours.

RAD 4291. Introduction to Quality Assurance. A study of the evaluation of radiographic systems to assure consistency in the production of quality images. The regulations governing quality assurance and the techniques, equipment and procedures for attaining it are discussed. The course includes the following number of contact hours: Theory - 16 contact hours.