

COURSE DESCRIPTIONS

College Classroom Courses OFFERED THROUGH CHICAGO CITY COLLEGE SYSTEM

Biology 116: Anatomy and Physiology. 5 Contact Hours. 4 Credit Hours. Introduction to anatomy and physiology of the human body with emphasis on the nine human body systems, cells, tissues, and organs. Lectures and laboratory.

Note: this course is not offered at all locations and may be listed under a different title at suburban/ out of state colleges. Please see the program director with questions.

Biology 120: Medical Terminology. 3 Contact Hours. 3 Credit Hours. Basic medical vocabulary for allied health professionals and others with minimal background in anatomy and physiology. Includes study of the human body systems.

HOSPITAL COURSES

Introduction to the Health Sciences: 3 Contact Hours.

- ***Patient Care in Radiologic Sciences:*** Content is designed to provide the basic concepts of patient care, including consideration for physical and psychological needs of the patient and family. Routine and emergency patient care, infection control utilizing standard precaution, and role of the radiographer in patient education.
- ***Fundamentals of Radiologic Science and Health Care:*** Introduction to the health care system, the hospital, school, diagnostic imaging and student life. Provides an overview of the foundations in radiography and the practitioner's role in the health care delivery system. Discusses principles, practices and policies of the health care organization(s).
- ***History and Ethics and Law in Radiologic Sciences:*** Provides a fundamental background in ethics. The historical and philosophical basis of ethics, as well as ethical behavior. The student will examine a variety of ethical issues and dilemmas, and be introduced to legal terminology, concepts and principles, misconduct, malpractice, legal and professional standards, and the ASRT scope of practice. The importance of documentation and informed consent is emphasized.

Radiographic Positioning I: 6 Contact Hours. Introduction to positioning, principles, terminology, and topographic landmarks. Proper positions for radiographs of the osseous system including extremities, chest, thorax, and abdomen. Correlation with radiographs through laboratory and seminars.

Radiographic Positioning II: 6 Contact Hours. Discusses proper positions for radiography of the biliary, gastrointestinal, and urinary systems. Includes introduction to pharmacology, drug administration & Venipuncture ,radiographic contrast media and reactions. Discusses radiography of the vertebral column. Introduction to mobile radiography and surgery.

Radiographic Positioning III:3 Contact Hours. Advanced radiographic positioning to include skull radiography, tomography, surgery, pediatric and age specific radiography, advance immobile/trauma radiography.

Radiographic Patho-Physiology&

Specialized Procedures : 4 Contact Hours. Introduction to the study of disease, theories of disease causation and pathophysiologic disorders that compromise healthy systems. Etiology, pathophysiologic responses clinical manifestation, radiographic appearance and management of alterations in body systems. Review of anatomy and physiology. Introduction to cross-sectional and saggittal anatomy with radiographic representation. Imaging procedures used to demonstrate pathologic disease, such as, angiography, gynecological radiography, neuroradiography, and other advanced radiologic procedures. Provides a more detailed explanation of pharmacology, drug administration & Venipuncture

Principles of Radiographic Exposure I: 4 Contact Hours. Discusses basic methods of radiation protection, and introduces radiation physics and imaging equipment. Basic fundamentals concerned with production and recording

of the radiographic image. Includes film screen and digital image acquisition and processing. Introduces radiographic technique formulation and problem solving. Clinical correlation through laboratory experience.

Principles of Radiographic Exposure II: 4 Contact Hours. Development of major fundamentals considered in Principles I with application and in correlation with quality analysis/ problem solving techniques. Emphasis is placed on formulation of radiographic techniques based on established critical thinking principles, formulas, and conversions. Includes laboratory for the production of radiographs using phantom images for analysis.

Principles of Radiographic Exposure III: 4 Contact Hours. Further development of concepts learned in Principles I, II and imaging equipment with emphasis on advance imaging concepts, and technological advances in the radiological sciences.

- ***Imaging Equipment-*** Review of radiographic and fluoroscopic, mobile and tomographic equipment requirement and design, as well as basic knowledge of quality control and quality assurance processes
- ***Basic Principles of Computed Tomography-*** Provides entry level radiography students with principles related to computed tomography.
- ***Digital Image Acquisition and Display-*** Designed to impart an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving, and retrieval. Guidelines for selecting exposure factors and evaluating images, digital quality assurance and maintenance. Develop a link between film based and digital imaging,
- ***Intro to Advance Diagnostic and Therapeutic Imaging-*** Provides entry level radiography students with basic principles of advanced imaging and treatments, such as MRI, Ultrasound, Historical imaging procedures, and rarely performed procedures. Also introduces briefly information regarding Radiation Therapy, and Nuclear Medicine .

Radiologic Physics: 4 Contact Hours. Fundamentals of electricity, magnetism, atomic structure, and the x-ray circuit.

- ***Imaging Equipment-*** Provides a detailed study of radiographic and fluoroscopic, mobile and tomographic equipment requirement and design, as well as basic knowledge of quality control.
- ***Radiation Production and Characteristics-*** Provide a basic knowledge of atomic structure and terminology. Also presented are the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter..

Radiation Biology/Radiation Protection: 3 Contact Hours. Investigate the biologic effect of ionization on living systems. Radiation effects on molecules, cells, tissues and the body as a whole. Correlated with acute and chronic biologic response of radiation. Methods and correct procedures related to radiation protection. Radiation protection responsibilities of the radiographer to patients, personnel and the public. Correlated radiation health safety requirements of federal and state regulatory agencies, accreditation agencies, and health care organizations.

Human Diversity & Communications : 2 Contact Hours. Designed to promote better understanding of patients' families and professional peers through comparison of diverse populations based on their value system, cultural, ethnic influences, communication styles, socioeconomic influences, health risks and life stages.

Image Analysis & Critical Thinking: 2 Contact Hours. Provide a basis for analysis 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.

Advanced Imaging & Professional Development: 2 Contact Hours. Involves advanced imaging. Explore electronic, and film imaging modalities. Cross-section anatomy and pathology for ultrasound , CT and MRI, independent research projects, guest lectures, group discussions on communication skills and professional development, and continued education in all didactic areas.

Professional Transition: 8 Contact Hours. A continuation of specialized education assignments and review of all course materials in preparation for the ARRT Registry examination is included. Provide the essential tools needed to seek employment and to operate in the field of radiography. Explains criteria needed to maintain certification, and licensure. Gives information on the requirements needed for professional development and growth

II. Clinical Courses:

Introduction to Clinical Health Occupations: 16 Contact Hours. Introduction to the hospital, departmental structure and radiologic technology, and student life. Assignments to radiographic rooms, and ancillary services within radiology include: room inspection, clerical duties, patient transportation, and equipment manipulation. Participation in radiographic examinations related to chest, abdomen, thorax, pelvic girdle, shoulder girdle, upper and lower extremities.

Radiography I: 24 Contact Hours. Participation in previously learned radiographic examinations. Introduction to contrast media studies and spine positioning. Development and improvement of patient and staff communications. Assignments in the Darkroom and Quality Control I. Application of self-improvement and assessment skills through structured and planned individual and/or group sessions.

Internship I: 40 Contact Hours. Participation in all previously learned radiographic examinations. Development and refinement of contrast media studies, spine & skull positioning. Improvement of patient and staff communication and patient care, technologies,/ refinement.

Radiography II: 24 Contact Hours. Participation in all previously learned radiographic examinations, with emphasis on skull and facial radiography, as well as the refinements of contrast examinations. Introduction to surgical and Specialized Radiographic Imaging procedures and computerized tomography.

Radiologic Technology: 40 Contact Hours. Observation and limited participation in areas relating to Radiologic Technology including Specialized Procedures, Angiography, Ultrasound, Xeroradiography, Cardiac Catheterization, Quality Assurance, Computed Tomography, Diagnostic Pediatrics, Clinical Instruction, Supervision, Radiation Therapy and Radiographic Interpretation. Skill development and proficiency in all routine examinations, advanced performance in non-routine and surgical radiography and image analysis.

Internship II: 40 Contact Hours. Participation in all radiographic examinations including surgical, emergency room trauma, Specialized Imaging procedures and Nuclear Medicine. Final competency evaluations in radiographic proficiency is required. Skills in nursing procedures and related allied health services are developed and refined