

**GREAT PLAINS TECHNOLOGY CENTER
COURSE OF STUDY**

- Career Cluster:** Health Science (HL)
- Career Pathway:** Diagnostic Services (HL002)
- Career Major:** Radiologic Technology (HL0020003)
- Career Major Hours:** Adult Students: 2533 Hours
- Director:** Carrie Baxter, M.Ed., Registered Radiologic Technologist in Radiography, Mammography, and Computed Tomography – R.T. (R) (M) (CT)
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- Clinical Coordinator:** Donna Madden, M.Ed., Registered Radiologic Technologist in Radiography - R.T. (R)
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- Instructors:**
- | Name | Office Number | E-Mail |
|----------------|----------------------|-------------------------|
| Kelly Smith | (580) 351-6776 | ksmith@greatplains.edu |
| Deborah Ousley | (580) 250-5578 | dousley@greatplains.edu |
- Certifications:** Kelly Smith, M.Ed., Registered Radiologic Technologist in Radiography – R.T. (R)
- Deborah Ousley, M.Ed., Registered Radiologic Technologist in Radiography – R.T. (R)
- Academic Credit:** Transcript/Certificate/Diploma
Preparation to sit for the American Registry of Radiologic Technologist (ARRT) National Certification in Radiography
- College Credit:** Students may earn college credit from Western Oklahoma State College, Oklahoma State University-Okmulgee, Cameron University or other participating colleges through cooperative agreements approved by the Oklahoma State Regents for Higher Education.
- Prerequisites:** Must be a high school graduate or equivalent.
- Prerequisite Technical-Occupational Support and Related Courses must be completed prior to beginning the Radiologic Technology Program with a “C” or higher. All General Education Requirements must be completed prior to graduation. All General Education and Technical-Occupational Support and Related Courses must be sequenced to enable students to complete course work in a timely manner. Students must have a combined GPA of 2.5 on all completed General Education and **Technical-Occupational Support and Related Courses prior to

admission in the program. **Prerequisite-Biology or Zoology or an ACT score of 21 science **AND** **Completion of Human Anatomy & Medical Terminology with a “C” or above is required prior to program admission.

CPR Healthcare Provider by the American Heart Association
Cleared background check.

Acceptance into clinical education settings to meet Radiological Clinical Practice objectives

Minimum age of 18 to attend clinical sites and have passed the physical exam

Negative drug screen prior to the start of class. Students may be subject to drug testing prior to and possibly during the clinical experience.

Passed physical exam requirements

Career Major Description:

Students in this major will learn how to perform imaging procedures using radiation. They will learn about imaging procedure and learn problem-solving techniques for image evaluation, and factors that can affect image quality. They will also learn how to work a variety of radiographic equipment and how to protect themselves and patients. In addition, students will also learn about patient care and how to handle routine and emergency patient care along with ethics, techniques of venipuncture and how to administer diagnostic contrast agents. Clinicals are also included in this major. Students will need to obtain certification from the American Registry of Radiologic Technologist (ARRT) in order to practice this career major.

Career Major Goals:

- Students will demonstrate critical thinking skills.
- Students will demonstrate clinical competence in their knowledge and technical skills.
- Students will exhibit professionalism.
- Students will demonstrate communication skills necessary to effectively interact with patients and healthcare professionals.
- The program will demonstrate effectiveness.

Related Career Opportunities:

- Computer Tomography Imaging Technologist
- Mammographer
- Sonographer
- Magnetic Resonance Imaging Technologist

Career Major Objectives:

After successful completion of this career major, the student will be able to:

- Demonstrate an understanding of the health sciences profession, environment, hospital organization, accreditation, regulatory agencies, professional credentialing, professional organizations, professional development, advancement, equipment, basic radiation protection, radiobiology, human diversity and safety.
- Develop a working knowledge of medical terminology throughout the Radiologic technology curriculum.

- Apply knowledge of human structure and function for radiography to accurately demonstrate anatomical structures of the human body on a radiograph or other imaging receptor and aid in the assessment of patient's function.
- Demonstrate the professional obligations to the care of the patient concerning the moral, legal and ethical practices involved in patient care, to include HIPAA compliance.
- Apply knowledge of film screen image acquisition and processing in those areas with film screen equipment in the laboratory and clinical education settings.
- Apply knowledge of imaging equipment in the clinical education settings and laboratory.
- Apply knowledge of digital image acquisition and display for those areas that are equipped with computer and digital resources.
- Provide physiological and physical patient care and recognize emergency conditions that warrant first aid or CPR with an overview of venipuncture, EKG skills, urinary catheterization and drug administration.
- Provide psychological or physical patient care and recognize emergency conditions that warrant response and apply skills in pharmacology and drug administration.
- Completion of competency in all areas of required clinical competencies and be able to function within a radiology department as a radiographer.
- Apply knowledge of basic principles of computed tomography along with identification of sectional anatomy and imaging.
- Demonstrate and apply knowledge of radiation biology within the Radiologic sciences.
- Apply knowledge of radiation production and characteristics in the Radiologic sciences setting.
- Demonstrate and apply radiation protection in the laboratory and clinical education settings.
- Relate knowledge of positioning and radiographic techniques to patient's body habitus to accurately demonstrate structures on a radiograph or other imaging receptor.
- Exhibit knowledge of the effects and changes of pathology and disease as it relates to various radiographic procedures.
- Demonstrate knowledge and skills necessary to obtain employment in radiography by completion of a professional resume and portfolio.
- Successfully complete comprehensive program review for radiography in order to pass the American Registry of Radiologic Technologists examination in radiography.
- Apply knowledge of advanced imaging modalities to be trained as well as apply skills in advanced radiographic procedures.

DESCRIPTION OF COURSES

<u>Course #</u>	<u>Course Name</u>	<u>ADT</u>	<u>ADL</u>	<u>Total</u>
HL00346	Introduction to Radiologic Sciences and Health Care (Semester I)	24	24	48

Content is designed to provide an overview of the foundations in radiography and the practitioner's role in the healthcare delivery system. Principles, practices and policies of the healthcare organizations are examined and discussed in addition to the professional responsibilities of the radiographer.

HL00342 Core Medical Terminology (Prerequisite Course)

Medical Terminology is designed to develop in the students a working knowledge of the language of medicine. Students acquire word building skills by learning prefixes, suffixes, roots and abbreviations. By relating terms to body systems, students identify proper uses of words in a medical environment. Knowledge of medical terminology enhances students' ability to successfully secure employment or pursue advanced education in healthcare.

**HL00454 Human Structure and Function
(Semester I, II, III)**

57 58 115

Content is designed to establish a knowledge base in anatomy and physiology. Components of the cells, tissues, organs, and systems are described and discussed. Anatomy/Physiology is the study of the structural complexity of the human body and its intricate functional mechanisms. This course is taught as a laboratory science. Students will conduct scientific investigations and fieldwork using scientific knowledge and methodology that will enable them to make educated conclusions based on higher-level critical thinking and problem solving skills. The areas studied will be an integration of biology and chemistry and will include, but are not limited to: Organization of the body, Chemical Basis for Life, Cells & Tissues, Integumentary System, Skeletal system, Muscular system, Nervous system, Endocrine system, Blood, Circulatory system, Lymphatic & Immune systems, Respiratory systems, Digestive system & Metabolism, Urinary system, and Reproductive system. An emphasis should be placed on real-world applications and active-learning exercises should be included along with laboratory experiences. (*This course will be taught during semesters I, II, III and IV according to the following format):

Semester I (Human Structure & Function I) – 39 Hours

- Anatomical Nomenclature
- Body Cavities/Organization of the Body
- Bone and Articulations
- The General Skeletal System
- Topographic anatomy
- The Respiratory System
- The Abdominal Cavity
- The Digestive System/Upper Gastrointestinal System
- The Digestive System/Lower Gastrointestinal System
- The Urinary System
- The Biliary System and Anterior Neck

Semester II (Human Structure & Function II) – 54 Hours

- Upper Extremity
- Lower Extremity
- Pelvis
- Coccyx, Sacrum, Lumbar Vertebrae
- Thoracic Vertebrae
- Cervical Vertebrae
- Bony Thorax
- One Year Review

Semester III (Human structure & Function III) – 22 Hours

- Cranium
- Facial Bones
- Orbits
- TMJ and Mandible
- Paranasal Sinuses

HL00161	Ethics and Law in the Radiologic Sciences (Semester I)	16	16	32
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Content is designed to provide a fundamental background in ethics. The historical and philosophical bases 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.

HL00162	Image Analysis I (Semester I and II)	24	24	48
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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. This course emphasizes the importance of identifying and evaluating diagnostic images. Guidance is given in the selection of accurate improvement methods. Knowledge and experience is also gained during the first year clinical evaluations with the instructor, and through routine image assessment during the Procedures course.

Upon successful completion of the course, the student will be expected to:

1. Describe an effective image analysis method.
2. Critique images for appropriate technical, procedural and pathologic factors.
3. Recommend corrective actions to improve images.

*(*Content from Image Analysis I, Image Analysis II , Radiographic Procedures I and Radiographic Procedures II will be taught in conjunction and combined for one grade.)*

Semester I (Image Analysis I) – 24 Hours

- Analysis of the Respiratory System
- Analysis of the Abdominal Cavity / Biliary System
- Analysis of the Digestive System
- Analysis of the Urinary System

Semester II (Image Analysis II) – 24 Hours

- Analysis of the Upper Extremity
- Analysis of the Lower Extremity

HL00195	Principles of Imaging (Semester II)	30	30	60
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Content is designed to establish a knowledge base in factors that govern and influence producing and recording radiologic images. Film and electronic imaging with related accessories are emphasized. Class demonstrations/labs are used to demonstrate theory application.

- Exposure Factors
- Image Appearance Standards
- Beam-limiting Devices
- Beam Filtration
- Scattered and Secondary Radiation
- Grids
- Film/Film Processing

- Exposure latitude
- Density/Brightness
- Contrast
- Recorded Detail
- Distortion
- Exposure Factor Formation

HL00450 Image Analysis II 24 24 48
(Semester III and IV)

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. (**Content from Image Analysis III, Image Analysis IV, Radiographic Procedures III and Radiographic Procedures IV will be taught in conjunction and combined for one grade.*)

At the completion of the course the student will be expected to:

1. Describe an effective image analysis method.
2. Critique images for appropriate technical, procedural and pathologic factors.
3. Recommend corrective actions to improve images.

Semester III (Image Analysis III) – 1 24 Hours

- Analysis of the Pelvis
- Analysis of the Sacrum and Coccyx Vertebrae
- Analysis of the Lumbar Vertebrae
- Analysis of the Thoracic Vertebrae
- Analysis of the Cervical Vertebrae
- Analysis of the Bony Thorax

Semester IV (Image Analysis IV) – 24 Hours

- One Year Review
- Analysis of the Cranium
- Analysis of the Facial Bones
- Analysis of the Orbits
- Analysis of the TMJ and Mandible
- Analysis of the Paranasal Sinuses

HL00196 Imaging Equipment 36 36 72
(Semester I)

Content is designed to establish a knowledge base in radiographic, fluoroscopic, mobile and tomographic equipment requirements and design. The content also provides a basic knowledge of quality control.

- X-Ray Circuit
- Radiographic Equipment
- X-Ray Tube
- Image Intensified Fluoroscopy
- Linear Tomography
- Quality Management

HL00194	Digital Image Acquisition and Display (Semester IV)	32	32	64
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This course contains content 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 are discussed. The guidelines for selecting exposure factors and evaluating images within a digital system will assist students to bridge between film-based and digital imaging systems. Principles of digital system quality assurance and maintenance are presented.

- Basic Principles of Digital Radiography
- Image Acquisition
- Image Acquisition Errors
- Software (Default) Image Processing
- Fundamental Principles of Exposure
- Image Evaluation
- Quality Assurance and Maintenance Issues
- Display
- Data Management

HL00197	Patient Care in Radiologic Sciences (Semester I)	32	32	64
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Content is designed to provide the basic concepts of patient care, including consideration for the physical and psychological needs of the patient and family. Routine and emergency patient care procedures are described as well as infection control procedures using standard precautions. The role of the radiographer in patient education is identified.

HL00198	Pharmacology and Venipuncture (Semester V)	16	16	32
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Content is designed to provide basic concepts of pharmacology. The theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications is included. The appropriate delivery of patient care during these procedures is emphasized.

HL00055	Clinical Practice I (Clinical Hours) Semester I, II and III	0	645	645
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Content and clinical practice experiences should be designed 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.

Semester I (Clinical Practice I) – 104 Hours
Semester II (Clinical Practice II) – 390 Hours
Semester III (Clinical Practice III) – 151 Hours

HL00453	Clinical Practice II (Clinical Hours) Semester IV and V	0	645	645
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Content and clinical practice experiences should be designed 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.

Semester IV (Clinical Practice IV) – 382.5 Hours

Semester V (Clinical Practice V) – 262.5 Hours

HL00199	Introduction to Computed Tomography (Semester III)	16	16	32
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Content is designed to provide entry-level radiography students with the principles related to computed tomography (CT) scans.

HL00200	Radiation Biology (Semester V)	24	24	48
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Content is designed to provide an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues, and the body as a whole are presented. Factors affecting biological response are presented, including acute and chronic effects of radiation.

HL00111	Radiation Production and Characteristics (Semester I)	24	24	48
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Content is designed to establish 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.

HL00140	Radiation Protection (Semester V)	24	24	48
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Content is designed to present an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel, and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies, and health care organizations are incorporated.

HL00141	Radiographic Procedures I (Semester I and II)	75	75	150
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Content is designed to provide the knowledge base necessary to perform standard radiographic procedures. Consideration is given to the evaluation of optimal diagnostic images. Laboratory experience complements the didactic portion. This course provides the student with theoretic concepts, terminology and clinical application for routine positioning procedures. Students will be given an opportunity to demonstrate their knowledge and skill in performing the simulated exams, which will later become a basis for competency in the clinical practicum. Knowledge of anatomic structures and radiographic quality will be evaluated in classroom activities. (**Content from Image Analysis I, Image Analysis II, Radiographic Procedures I and Radiographic Procedures II will be taught in conjunction and combined for one grade.*)

Upon completion of this course the student will be expected to:

1. Practice effective communication skills during imaging procedures.
2. Perform standard imaging procedures.
3. Modify standard imaging procedures to accommodate patient conditions and other variables.

Semester I (Radiographic Procedures I) – 90 Hours

- Introduction to Radiographic Procedures & Imaging Standards
- General Considerations I and II
- Procedure of the Respiratory System

- Procedure of the Abdominal Cavity/Biliary System
- Procedure of the Digestive System
- Procedure of the Urinary System

Semester II Radiographic Procedures II) – 60 Hours

- Procedure of the Upper Extremity
- Procedure of the Lower Extremity

HL00139 Radiographic Pathology (Semester IV) 16 16 32

Content is designed to introduce theories of disease causation and the pathophysiologic responses pathogenesis, clinical manifestations, radiographic appearance and management of alterations in body systems are presented.

HL00456 Radiographic Procedures II (Semester III and IV) 75 75 150

Content is designed to provide an advanced knowledge base necessary to perform standard radiographic procedures, including basic computed tomography (CT) and special studies. Consideration is given to the evaluation of optimal diagnostic images. Laboratory experience should complement the didactic portion. This course provides the student with theoretic concepts, terminology, and clinical application for routine positioning procedures. Students will be given an opportunity to demonstrate their knowledge and skill in performing the simulated exams, which will later become a basis for competency in the clinical practicum. Knowledge of anatomic structures and radiographic quality will be evaluated in classroom activities. (**Content from Image Analysis III, Image Analysis IV, Image Analysis V, Radiographic Procedures III and Radiographic Procedures IV and Radiographic Procedures V will be taught in conjunction and combined for one grade.*)

Upon completion of this course the student will be expected to:

1. Modify communication skills to accommodate patient conditions and other variables.
2. Perform specialized imaging procedures.
3. Adapt specialized imaging procedures to accommodate for patient conditions and other variables.

Semester III (Radiographic Procedures III) – 60 Hours

- Procedures of the Pelvis
- Procedures of the Sacrum and Coccyx Vertebrae
- Procedures of the Lumbar Vertebrae
- Procedures of the Thoracic Vertebrae
- Procedures of the Cervical Vertebrae
- Procedures of the Bony Thorax

Semester IV (Radiographic Procedures IV) – 90 Hours

- One Year Review
- Procedures of the Cranium
- Procedures of the Facial Bones
- Procedures of the Orbits
- Procedures of the Paranasal Sinuses
- Procedures of the TMJ and Mandible
- Nervous System Anatomy
- Circulatory System Anatomy
- Muscular System Anatomy

- Procedures of the Reproductive System
- Procedures of the Nervous System
- Geriatric Imaging
- Pediatric Imaging
- Trauma/Mobile/Surgery Imaging
- Urinary Catheterization
- Electrocardiography

HL00383 Career Preparation for Radiography (Semester I) 8 8 16

This course emphasizes communication skills and specific career knowledge for the health care professional. To support an occupational job search, a functional resume will be produced that summarizes the student's education, personal and professional achievements and work experience. To enhance their professional images, each student will construct cover letters and thank you notes that may be updated or changed as needed. Advanced career modality requirements and preparation will be investigated, as well as the requirements for professional continuing education and opportunities for life-long learning.

HL00384 Comprehensive Program Review for Radiography (Semester V) 44 44 88

This course provides a comprehensive review of the radiography curriculum in preparation for taking the certification exam given by The American Registry of Radiologic Technologists (ARRT). Identified areas of weakness will help the student focus on the curriculum items that need concentrated study. The computerized testing format of the ARRT exam will be emphasized.

Upon completion of the course the student will be expected to:

1. Apply the knowledge gained from the program curriculum to successfully complete mock registry examinations.

HL00449 Advanced Imaging (Semester V) 24 24 48

This course emphasizes advanced skills and specific career knowledge for the health care professional. To broaden their knowledge of primary radiographic procedures, the student will be involved in the exploration of specialized diagnostic and/or therapeutic procedures that may include, but is not limited to, the study of advanced imaging procedures and related associated imaging modalities, analysis of radiographic/sectional images, and evaluation of ethical dilemmas. Flexibility is built into this course to provide a means for program faculty to develop the specialized knowledge and skills that may be required of students at their specific geographical location.

Career Major Total:	Theory	Lab	Clinical	Total
Adult Student:	621	622	1290	2533

*Additional Hours added to Career Cluster Major with Prerequisite Medical Terminology of 45 Hours to equal 2578 Hours in Career Major

Evaluation Policy:

Didactic Learning Evaluation

Test Grades (75% of final grade)

- Cognitive exams
- Performance exams (hands-on)
- Project Assignments

Final Exam Grade (25%)

- Cognitive exam that covers material presented over the semester

Clinical Learning Evaluation

Employability Skills Grade (40% of final grade)

- Daily points for each clinical day attended equals 20 points.
- Student is graded over 5 categories for 4 points each to equal 20 daily points.
- Weekly grades will consist of the total 5 consecutive clinical days in session to equal 100 points.
- Student absence results in a "0" for that day's employability grade. -4 points will be deducted for each hour the student is tardy or absent, not to exceed 20 points per class.

Five categories for daily points

- Respectful / Honest
- Organized / Alertness
- Professional
- Punctual / Dedicated
- Positive Attitude

Description of five categories for daily points

- Does not talk back or argue with instructors, campus staff, clinical staff or classmates.
- Comes to class and clinical prepared with books, assignments due, clinical uniform, name badge, film badge and tools. Does not fall asleep in class or clinical.
- Adheres to campus and clinical dress, neat appearance. Does not have body or mouth odor.
- Team player.
- Determined to succeed demonstrating reliability by coming to campus and clinical on time.
- Positive working attitude, no whining or complaining and be flexible when asked to adjust assignment, clinical exams or campus policies.

Performance Grades (20% of final grade)

- Mandatory Clinical Competencies
- Radiographic Equipment Manipulation Competency
 - Semester I – Minimum of 2 diagnostic rooms at CCMH
 - Semester II – V All remaining diagnostic and mobile radiographic equipment as student rotates to each clinical educational setting
- Radiographic Computer Applications Competency
 - Semester I – Minimum of computed radiography workstation and cassette reader

- Semester II – V All remaining radiographic computer applications as student rotates to each clinical educational setting
- Clinical Experience Log

Clinical Grades (40% of final grade)

- Clinical proficiency evaluations
- Simulated Exam Semester I
- Clinical performance evaluations

Grading Scale:

The grading scale as adopted by the Board of Education is as follows:

A = 93 – 100

B = 85 – 92

C = 78 – 84

D = 70 – 77

F = 69 and below

NOTE: Students must receive a minimum of a “C” or a 78% average to pass the Radiologic Technology didactic courses. Students must also pass clinical courses with a minimum of a “B” or 80% average on a ten point grading scale. Students are required to maintain a 78% average in each didactic course taught to pass levels in each Semester and 80%, for each clinical course for each semester during their 22 month training period. If at any time during the courses, the student’s grade falls below 78% for didactic or 80% for clinical, the student will be notified of this and placed on Academic Probation. If a final exam brings GPA below the 78% in didactic courses or 80% in clinical courses, then the student will be dismissed from the program, regardless of prior probationary status. Students will be notified of their GPA prior to taking a final exam. (For probation specifics refer to Radiologic Technology Program Student Handbook, page 33.)

Clinical competencies must be maintained at 100% to pass levels for each Semester. If student does not maintain competencies for the Semester they will be put on Clinical Probation, until competencies are reached in the next following Semester. Failure to meet the competency requirements at the end of the following Semester will result in student dismissal from the Radiography Technology program. (For probation specifics refer to Radiologic Technology Program Student Handbook, page 33.)

Assignments turned in by students 1 day late results in 10 points loss per day up to 1 week of that assignment grade. Late assignments in excess of 1 week (7 consecutive days to include the weekend – ex. Thursday to Monday = 4 days) will result in a “0” for that assignment grade. (If student is absent the day that the assignment was made, it is the **student’s responsibility** to contact instructor to review material covered during class or clinical and receive assignments or worksheets given.)

Exams should be made up immediately upon return to campus class, unless advanced arrangements have been made with instructor to take exam within one week of missed examination. Any student missing an exam must provide justifiable written documentation prior to making up the exam or a letter grade (i.e. 7 points) will be deducted from the makeup exam. If student fails to make up the exam during the specified time frame, it will result in a “0” for that exam grade. (It is the student’s responsibility to make arrangements with the instructor for examination make-ups. Make-up exams are lowered one letter grade.) Exam items left blank on exams will result in double penalties, to encourage the student to answer questions.

Make-Up Work Policy:

All Make-Up Work Is The Responsibility Of The Student. Make-up work will be handled as specified in the Student Handbook. Please be sure to read and understand all student policies, especially make-up of assignments, tests and employability due to absences. Students should always arrange for any make-up work with the instructor as per the Student Handbook. Students should keep track of his or her progress and grades.

Attendance Policy:

For specific information related to attendance and tardiness refer to the Student Handbook. Students should keep a written record of their absences and tardiness.

Certification Outcomes:

Tier 1 – Certifications Recognized, Administered and/or Endorsed by Industry

- AART: Radiography Certification Exam

Tier 7 – National Career Readiness Certificate in Applied Mathematics, Locating Information and Reading for Information:

- Platinum Level – 6 or above in all three areas
- Gold Level – 5 or above in all three areas
- Silver Level – 4 or above in all three areas
- Bronze Level – 3 or above in all three areas

Industry Alignments:

- American Registry of Radiologic Technologists (ARRT)
- American Society of Radiologic Technologists (ASRT)
- Joint Review Committee on Education in Radiologic Technology (JRCERT)
20 North Wacker Drive, Suite 2850
Chicago, IL 60606-3182

CIP Code and SOC Code Crosswalk:

- CIP Code – 51.0911
- SOC Code – 29-2034.00

Instructional Materials:

Adult students are required to purchase the following list of textbooks and/or supplemental reference materials. The prices listed are approximate and subject to change.

Textbooks:

Adler, Alene M., and Richard R. Carlton. Introduction to Radiologic Sciences and Patient Care. 6th ed. 978-0-323-31579-1. Philadelphia: Elsevier Publishing, 2015. (\$76.00)

Carlton, Richard R., and Arlene M. Adler. Principles of Radiographic Imaging: An Art and A Science. 5th ed. 978-1439058725. Florence: Cengage Learning, Inc., 2013. (\$208.00)

Carlton, Richard R., et al. Principles of Radiographic Imaging Workbook. 5th ed. 978-1439058701. Canada: Thompson Delmar, 2006. (\$105.00)

Eisenberg, Ronald L., and Nancy Johnson. Comprehensive Radiographic Pathology. 6th ed. 978-0323353243. Philadelphia: Elsevier Publishing, 2016. (\$100.00)

Long, Bruce W., et al. Merrill's Atlas of Radiographic Positioning and Procedures: 3-Volume Set. 13th ed. 978-0-323-26341-2. Philadelphia: Elsevier Publishing, 2015. (~~\$275.00~~)

Long, Bruce W., Jeannean H. Rollins, and Tammy Curtis. Workbook for Merrill's Atlas of Radiographic Positioning & Procedures. 13th ed. 978-0-323-26338-2. Philadelphia: Elsevier Publishing, 2015. (~~\$114.00~~)

Sherer, Mary; et al. Radiation Protection in Medical Radiography. 7th ed. 978-0-323-17220-2. Philadelphia: Elsevier Publishing, 2013. (~~\$75.00~~)

Sherer, Mary; et al. Workbook for Radiation Protection in Medical Radiography. 7th ed. 978-0323222167. Philadelphia: Elsevier Publishing, 2013. (~~\$45.00~~)