

RTE: RADIOLOGIC TECHNOLOGY

Courses	Credit(s)	Contact	Lab
RTE 1000. INTRODUCTION TO RADIOGRAPHY. 3 3 0 INTRODUCTION TO RADIOGRAPHY Prerequisite: Acceptance to Radiography A.S. Degree program Corequisites: RTE 1111C An overview of radiography and its role in health care delivery with orientation to academic and administrative structure and to the profession as a whole, including ethical and legal responsibilities, patient consent and hospital and departmental policies, and basic radiation protection principles. A minimum grade of C is required for all Radiography Program courses.	3	3	0
RTE 1000C. INTRODUCTION TO RADIOGRAPHY. 4 0 3 INTRODUCTION TO RADIOGRAPHY Prerequisite: Acceptance to Radiography A.S. Degree program Corequisites: RTE 1111C An overview of radiography and its role in health care delivery with orientation to academic and administrative structure and to the profession as a whole, including ethical and legal responsibilities, patient consent and hospital and departmental policies, and basic radiation protection principles. A minimum grade of C is required for all Radiography Program courses.	4	0	3
RTE 1111C. PATIENT CARE IN RADIOGRAPHY. 3 2 3 PATIENT CARE IN RADIOGRAPHY Prerequisite: Acceptance to Radiography, A.S. Degree Program Corequisite: RTE 1000C Content is designed to provide the basic concepts of patient care including consideration for physical, psychological, legal, and ethical 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. Basic concepts of pharmacology/drug administration and theory and practice of venipuncture techniques are presented. A minimum grade of C is required to pass this course. (Special Fee: \$22.00).	3	2	3
RTE 1418. PRINCIPLES OF RADIOGRAPHY I. 3 3 0 PRINCIPLES OF RADIOGRAPHY I Prerequisites: Minimum grade of C in RTE 1000 and RTE 1111C Basic principles of radiation, image receptor systems, processing, and a study of the factors that govern and influence the production and evaluation of the radiographic image will be presented. A minimum grade of C is required for all Radiography Program courses.	3	3	0
RTE 1458. PRINCIPLES OF RADIOGRAPHY II. 3 3 0 PRINCIPLES OF RADIOGRAPHY II Prerequisite: Minimum grade of C in RTE 1418 and RTE 1503C An overall survey of factors affecting the production of high quality radiographs. Manipulation of technical factors and use of accessory devices to produce quality radiographic images will be explored. Quality assurance evaluation methods for radiographic systems will be presented, performed, and orally reported. A minimum grade of C is required for all Radiography Program courses.	3	3	0
RTE 1503C. RADIOGRAPHIC PROCEDURES I. 4 3 3 RADIOGRAPHIC PROCEDURES I Prerequisite: Acceptance into the Radiography Program and minimum grade of C in RTE 1000 and RTE 1111C A study of patient habitus, positioning, equipment manipulation, and radiographic quality image evaluation of the chest, abdomen, and appendicular skeleton. Emphasis is placed on critical thinking and communication skills related to procedure performance patient care and radiation protection. A minimum grade of C is required for all Radiography Program courses. (Special Fee: \$14.00).	4	3	3

RTE 1513C. RADIOGRAPHIC PROCEDURES II. 4 3 3 RADIOGRAPHIC PROCEDURES II Prerequisites: Acceptance to the Radiography Program and RTE 1503C and RTE 1418 A study of patient positioning, equipment manipulation, and radiographic quality evaluation of the axial skeleton. Emphasis is placed on critical thinking and communication skills related to procedure performance, patient care, and radiation protection. A minimum grade of C is required for all Radiography courses. (Special Fee: \$14.00).	4	3	3
RTE 1523C. RADIOGRAPHIC PROCEDURES III. 3 2 3 RADIOGRAPHIC PROCEDURES III Prerequisite: Acceptance into the Radiology Program and RTE 1513C and RTE 1458 A study of patient positioning and radiographic quality image evaluation for contrast procedures for gastrointestinal and genitourinary systems, special studies and CT with emphasis on equipment manipulation, to include fluoroscopy and mobile radiography. Emphasis is placed on critical thinking and communication skills related to patient care and radiation protection. A minimum grade of C is required for all Radiography courses. (Special Fee: \$14.00).	3	2	3
RTE 1804L. RADIOGRAPHIC CLINICAL EDUCATION I. 2 0 16 RADIOGRAPHIC CLINICAL EDUCATION I Prerequisite: Acceptance into the Radiography Program and minimum grade of C in RTE 1000 and RTE 1111C Supervised clinical experience and competency evaluation of professional interaction and performance of routine radiographic procedures with emphasis on radiation protection, patient care, equipment orientation, radiographic technique, image processing procedures and image quality evaluation. Minimum grade of C is required for all Radiography Program courses. (Special fee: \$27.00).	2	0	16
RTE 1814L. RADIOGRAPHIC CLINICAL EDUCATION II. 2 2 16 RADIOGRAPHIC CLINICAL EDUCATION II Prerequisites: Minimum grade of C in RTE 1804L Continuation of supervised clinical experience and competency evaluation of professional interaction and performance of routine radiographic procedures with emphasis on radiation protection, patient care, equipment operation, radiographic technique, image processing procedures and image quality evaluation. A minimum grade of C is required for all Radiography Program courses. (Special Fee: \$25.00).	2	2	16
RTE 1824L. RADIOGRAPHIC CLINICAL ED III. 3 0 24 RADIOGRAPHIC CLINICAL ED III Prerequisites: Minimum grade of C in RTE 1814L Continuation of supervised clinical experience and competency evaluation of professional interaction and performance of routine radiographic procedures with emphasis on radiation protection, patient care, equipment operation, radiographic technique, image processing procedures and image quality evaluation. A minimum grade of C is required for all Radiographic Program courses. (Special Fee: \$30.00).	3	0	24
RTE 2061. RADIOGRAPHIC SEMINAR. 3 3 0 RADIOGRAPHIC SEMINAR Prerequisites: A minimum grade of C in RTE 2563 and RTE 2385 This course is designed to provide a forum for student research and review of all aspects of radiography. A minimum grade of C is required for all Radiography Program courses.	3	3	0

RTE 2385. RADIATION BIOLOGY AND PROTECTION. 2 2 0

RADIATION BIOLOGY AND PROTECTION Prerequisites: A minimum grade of a C in RTE 1523C and 2762 Study of acute and chronic effects of ionizing radiation on biologic systems. Investigates responses at cellular and total organism level. Presents protection measures and regulations for all types of ionizing radiation. A minimum grade of C is required for all Radiography Program courses.

RTE 2563. PRINCIPLES OF RADIOGRAPHY III. 3 3 0

PRINCIPLES OF RADIOGRAPHY III Prerequisites: Minimum grade of a C in RTE 1458 A study of the physical principles and applications of imaging equipment; radiographic/fluoroscopic, computed tomography, digital imaging, magnetic resonance imaging, and radiology departmental computerization. Assignments include written journal article reports. A minimum grade of C is required for all Radiography Program courses.

RTE 2762. SECTIONAL ANATOMY. 3 3 0

SECTIONAL ANATOMY Pre-requisites: BSC 2094C Detailed study of gross anatomical structures will be systematically conducted for location, relationship to other structures and function. Identification of anatomical structures in axial (transverse), sagittal, coronal and orthogonal (oblique) planes will be achieved using illustrations and anatomy images comparing computed tomography, magnetic resonance imaging and ultrasound images, when applicable. A minimum grade of C is required for all radiography and sonography program courses.

RTE 2782. RADIOGRAPHIC PATHOLOGY. 3 3 0

RADIOGRAPHIC PATHOLOGY Prerequisites: Minimum grades of C in RTE 2385 and RTE 2563 Course content will provide student with an introduction to the concept of disease. The relationship of pathology and disease to various radiographic procedures will be discussed. Assignments will include an oral case presentation. A minimum grade of C is required for all Radiography Program courses.

RTE 2834L. RADIOGRAPHIC CLINICAL EDUCATION IV. 3 0 24

RADIOGRAPHIC CLINICAL EDUCATION IV Prerequisites: Minimum grade of C in RTE 1824L Continuation of supervised clinical experience and competency evaluation of professional interaction and performance of routine radiographic procedures with emphasis on radiation protection, patient care, equipment operation, radiographic technique, image processing procedures and image quality evaluation. A minimum grade of C is required for all Radiography Program courses. (Special Fee: \$25.00).

RTE 2844L. RADIOGRAPHIC CLINICAL EDUCATION V. 3 0 24

RADIOGRAPHIC CLINICAL EDUCATION V Prerequisites: Minimum grade of C in RTE 2834L Continuation of supervised clinical experience and competency evaluation of professional interaction and performance of routine radiographic procedures with emphasis on radiation protection, patient care, equipment operation, radiographic technique, image processing procedures and image quality evaluation. A minimum grade of C is required for all Radiography Program courses. (Special Fee: \$25.00).

RTE 2930. SELECTED TOPICS IN RADIOGRAPHY. 1-3 variable

SELECTED TOPICS IN RADIOGRAPHY Prerequisite: Departmental approval Selected topics in radiography based on the needs and areas of interest of the class and professor. May include laboratory work as part of the class. Multiple credit course. May be repeated for a maximum of 3 credits, but grade forgiveness cannot be applied. A minimum grade of C is required for all Radiography Program courses.

RTE 2942. INTERNSHIP IN RADIOGRAPHY. 1-4 variable

INTERNSHIP IN RADIOGRAPHY Prerequisites: Satisfactory completion of all mandated courses in Reading, Mathematics, English and English for Academic Purposes; minimum of 2.0 institutional or overall GPA, second-year standing in Radiography degree program, and Program Director's approval. The Program Director/Program Chair/Program Coordinator or Internship Placement Office has the discretion to provide override approval as it relates to the waiver of required program/discipline-related courses. This course is a planned work- based experience that provides students with an opportunity to fine-tune skill sets learned in coursework and enhance workplace skills through supervised practical experiences related to their career objectives. Each earned credit of Internship requires a minimum of 80 clock hours of work. Multiple credit course. May be repeated for credit, but grade forgiveness cannot be applied. Minimum grade of C is required for all Radiography Program courses. (Internship Fee: \$10.00).

RTE 3116. ADVANCED PATIENT CARE. 3 3 0

ADVANCED PATIENT CARE Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program, or the ATC in CT, MRI, Mammography or Vascular Sonography As the role of the medical imaging professional continues to expand, more knowledge is needed in all areas. Patient care is no exception. Advanced patient care skills are essential elements of providing high quality patient care. This course focuses on patient education, assessment, communication, pre-procedural and post-procedural care, and proper charting and documentation. Technologists' responsibilities and intervention in cases of critical patient need also will be discussed. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement.

RTE 3205. ADMINISTRATION AND SUPERVISION. 3 3 0

ADMINISTRATION AND SUPERVISION Prerequisite: Admission into the BS Radiologic & Imaging Sciences, BS Cardiopulmonary Sciences or the ATC in Leadership in Healthcare. This course focuses on the administrative structures of departments within healthcare organizations. It encompasses analysis of systems, decision-making processes, and communication techniques to interact with all levels of management and supervision within and outside of the department. Minimum grade of C required if used to satisfy BS Cardiopulmonary or BS Radiologic and Imaging Sciences degree requirement.

RTE 3213. RADIOLOGY INFORMATION SYSTEMS. 3 3 0

RADIOLOGY INFORMATION SYSTEMS Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program. This course will give the imaging professional the knowledge and skills relating to the purpose, use, maintenance, and regulations associated with the most current radiology management, health information, and picture archival medical systems. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement.

RTE 3253. TEACHING IN THE HEALTH PROFESSION. 3 3 0

TEACHING IN THE HEALTH PROFESSION Prerequisite: Admission into the BS in Radiologic & Imaging Sciences, or the BS in Cardiopulmonary Sciences programs. This course presents an analytical and developmental approach to the roles and functions of the health professional teacher. It focuses on teaching roles, style, and philosophy, and the application of learning theory to instructional design and lesson planning. Emphasis is placed on selection and application of appropriate teaching strategies, supportive technologies, and assessment methods necessary for a diverse student population. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement.

RTE 3588. MAMMOGRAPHY. 3 3 0

MAMMOGRAPHY Prerequisite: Admission the BS Radiologic and Imaging Sciences program or ATC in Mammography. Course content is designed to introduce the core concepts related to radiographic imaging of the breast. Breast anatomy and pathology will be included in the presentation of various diagnostic and therapeutic procedures. Special patient considerations and the Mammographer's role in women's health will be explored. Federal regulations as described by MQSA and the FDA will be applied to all aspects of mammographic imaging.

RTE 3590. COMPUTED TOMOGRAPHY. 3 3 0

COMPUTED TOMOGRAPHY Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program, or the ATC in CT. Course content is designed to impart an understanding of the physical principles and instrumentation involved in computer tomography (CT). Content will include detailed coverage of procedure protocols for CT imaging and a thorough coverage of common diseases diagnosable using CT. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement.

RTE 3591. MRI PRINCIPLES AND INSTRUMENTATION. 3 3 0

MRI PRINCIPLES AND INSTRUMENTATION Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program, or the ATC in MRI. Course content is designed to impart the basic concepts of Magnetic Resonance Imaging; explains basic principles and fundamentals of MRI using quantum physics; covers instrumentation, image weighting, image contrast, tissue characteristics, image formation, data collection, and MRI safety requirements. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement and/or ATC in MRI requirement.

RTE 3592. MR IMAGING AND PROCEDURES. 3 3 0

MR IMAGING AND PROCEDURES Prerequisite: Minimum grade of C in RTE 3591 Corequisite: RTE 4943L Course content is designed as a continuation of the MR Principles and Instrumentation course; explains pulse sequences and parameters; covers manipulation of technical factors, trade-offs, flow and MR artifacts. This course also covers slice selection, patient positioning, coil selection, and routine imaging protocols/techniques related to the head, neck, spine, abdomen, pelvis and extremities. Clinical practice (RTE 4943L) is required to be completed simultaneously with this course. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement and/or ATC in MRI requirement.

RTE 3593C. ADVANCED MRI PROCEDURES. 3 0 80

ADVANCED MRI PROCEDURES Prerequisites: Minimum grades of C in RTE 3592, and RTE 4943L completed at Valencia College. Course content is designed as a continuation of the MR Imaging and procedures course. It includes a clinical component; covers slice selection, patient positioning, coil selection and advanced imaging protocols/ techniques related to vascular head, advanced abdomen/pelvis studies and special MRI procedures. This course also covers procedure protocol management, patient monitoring, advanced image critique and basic pathology associated with MRI imaging. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement and/or ATC in MRI requirement.

RTE 3765. ANATOMY FOR THE MEDICAL IMAGER. 3 3 0

ANATOMY FOR THE MEDICAL IMAGER Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program, or the ATC in CT, or MRI. An advanced study of normal anatomical structures to include location, relationship to other structures, and function. Identification of anatomical structures in multiplanar sections will be achieved using diagrams and diagnostic images comparing Computed Tomography, Magnetic Resonance Imaging, and Ultrasound images, when applicable. Minimum grade of C required if used to satisfy Radiologic & Imaging Sciences or Cardiopulmonary Sciences B.S. degree requirement.

RTE 4474. QUALITY MANAGEMENT. 3 3 0

QUALITY MANAGEMENT Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program, or the ATC in Mammography. This course involves the study of quality assurance, quality improvement and quality control. It describes the role of the imaging technologist in developing and implementing quality assurance programs to ensure accurate diagnosis and safe patient care. It includes specific quality control procedures used to evaluate equipment operation and monitor procedure protocols. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement.

RTE 4574. ADVANCED IMAGING MODALITIES. 3 3 0

ADVANCED IMAGING MODALITIES Prerequisite: Admission into the BS in Radiologic & Imaging Sciences program. The course is an introduction to the physical principles that apply to image production through the use of high frequency x-ray and its interface with computer technology; the use of magnetic fields and radio frequency; the use of radiopharmaceuticals; and the use of ultrasound. Major emphasis is on understanding the application of physics for production of medical images through computer technology with computed tomography, magnetic resonance, mammography, cardiovascular/intervention technology, ultrasound and nuclide imaging. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement.

RTE 4941L. MAMMOGRAPHY PRACTICUM. 3 0 16

MAMMOGRAPHY PRACTICUM Prerequisite: A minimum grade of C in RTE 3588 and RTE 4474 completed at Valencia College; and either current professional employment or a minimum grade of C in RTE 3116; and department approval. The practicum course must begin within 12 months of completion of RTE 3588. Practical application in a clinical setting of knowledge acquired in the classroom. May not be repeated. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement and/or ATC requirement. (Special Fee: \$6.00).

RTE 4942L. CT PRACTICUM. 3 0 24

CT PRACTICUM Prerequisite: Minimum grade of C in RTE 3590 completed at Valencia and RTE 3765; and either current professional employment or a minimum grade of C in RTE 3116; and department approval. The practicum course must begin within 12 months of completion of RTE 3590. Practical application in a clinical setting of knowledge acquired in the classroom. May not be repeated. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement and/or ATC in CT requirement.

RTE 4943L. MRI PRACTICUM. 3 0 24

MRI PRACTICUM Prerequisite: A minimum grade of C in RTE 3591 and RTE 3765; and either current professional employment or a minimum grade of C in RTE 3116; and department approval. The practicum course must be taken simultaneously with RTE 3592. RTE 3591 and RTE 3592 must be completed at Valencia College. Corequisite: RTE 3592 This course is designed to provide students with a flexible clinical education experience in technical and professional aspects of magnetic resonance imaging. Content is presented as a progression in competency levels through clinical performance assessments and competencies. Students will observe, assist, and perform basic patient care and MRI clinical procedures under direct supervision and are expected to perform procedures independently, under indirect supervision, after completing competencies. Clinical practicum is required to be completed simultaneously with RTE 3592. May not be repeated. Minimum grade of C required if used to satisfy Radiologic and Imaging Sciences B.S. degree requirement and/or ATC in MRI requirement.