



SAINT FRANCIS SCHOOL OF RADIOGRAPHY

Bachelor Of Science
Imaging Technology
2016-2017 Handbook

RESURRECTION UNIVERSITY
COLLEGE OF NURSING & COLLEGE OF ALLIED HEALTH

A part of Presence Health

**Resurrection University Saint Francis School of Radiography
Bachelor of Science Imaging Technology
2016-2017**

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This Programmatic Catalog was developed to clarify specific policies and criteria that are unique to the Saint Francis School of Radiography. All general policies and procedures may be found in the University Catalog on the Resurrection University Website. [Resurrection University Website](#)

Policies are subject to change at any time. Students will be notified of such changes in writing and a signature of acknowledgement would be required.

Resurrection University
Saint Francis School of Radiography
Bachelor of Science Imaging Technology (BSIT)
2016-2017 Program Handbook

About the School of Radiography

Brief History - Saint Francis School of Radiography celebrates its 70th in 2016!!

In October 1995, the Saint Francis Medical Proceedings, Volume 4 Number 2(a), published a commemorative issue about the history of Department of Radiology and the program. Following is the excerpt:

“The two programs of which St. Francis Department of Radiology is most proud are the educational programs of Radiology Residency and the School of Radiologic Technology. The School of Radiologic Technology was approved for training on November 1, 1945 and is this year celebrating its semi-centennial. The School, which began with only minimal formal academic work, has progressed to a position where it is now recognized as one of the finest training school in the Midwest, graduating eight to ten students annually in its two year program. Not only do the graduates achieve an outstanding record on the Radiologic Registry but are recognized as extremely desirable employees following their graduation as they move on to many of the hospital in our area.”

The program has since evolved beginning with a name change to the Saint Francis School of Radiography (SOR), as the technology has also evolved. In 1977, the name Radiologic Technicians was changed to Radiologic Technologists by the American Society of Radiologic Technologists and further to be identified as Radiographers. The program has expanded beginning in 2000 when it added clinical education settings throughout the Chicagoland region, graduating approximately 20 students each year. Over the past 5 years, the program has offered a dual degree with Oakton Community College in Radiologic Technology.

And in July 2015, the Program has partnered with Resurrection University to advance the profession to a Bachelor’s Degree for those entering the program as of the fall of 2015. Welcome to this new cohort group – the Class of 2017!

Mission of the Program The Saint Francis School of Radiography is committed to excellence in education. We provide the healthcare community with competent, entry-level professionals in the field of Medical Imaging. The graduate acquires the knowledge and clinical experience necessary to qualify for the National Registry examination.

Philosophy This program has been developed to provide the necessary technical skills to promote responsible and dedicated technologists. The student’s professional capacity is built on progressive maturity, social and emotional values. It is of the utmost importance that he/she learns the meaning of human dignity and his/her responsibility to the patient, the profession and him/herself. By incorporating the Resurrection University Core Values of Compassion, Accountability, Respect, Excellence, and Service, the School of Radiography is dedicated to developing knowledgeable, patient-centered healthcare professionals.

Presence Health and Resurrection University

Resurrection University and therefore Saint Francis School of Radiography are members of Presence Health, which is a Catholic Health Care Ministry sponsored by the Franciscan Sisters of the Sacred Heart, Servants of the Holy Heart of Mary, Sisters of the Holy Family of Nazareth, Sisters of Mercy of the Americas, and the Sisters of the Resurrection.

The Program Mission reflects the Resurrection University of:

Mission

Resurrection University educates students to become healthcare leaders by cultivating a diverse learning community based on the Catholic tradition of faith, hope, and healing.

Vision

To be a learning community that thinks critically and embraces change, inspiring the next generation of health care professionals and leaders.

Values

Compassion - Accountability-Respect – Excellence -Service

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Program Goals and Student Learning Outcomes

In support of the program's mission statement, the program has developed the following:

1. Students will demonstrate effective communication skills.

Student Learning Outcomes:

- Students will demonstrate effective communication skills on the clinical floor.
- Students will demonstrate effective written communication in the classroom setting.
- Students will be able to verbally evaluate radiographs.

2. Students will develop critical thinking skills for application in the clinical setting.

Student Learning Outcomes:

- Students will adapt standard protocols for non-routine examinations.
- Students will critique images for diagnostic quality and devise necessary factors for quality improvement.

3. Students of the program will be clinically competent.

Student Learning Outcomes:

- Students will demonstrate accuracy in positioning skills.
- Students will select appropriate technical factors.
- Students will demonstrate proper radiation protection practices.

4. Students will model professionalism.

Student Learning Outcomes:

- Students will demonstrate high ethical standards.
- Students will summarize their professional development career plan.

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Accreditation

The Joint Review Committee on Education in Radiologic Technology accredits the Resurrection University Saint Francis School of Radiography.

(JRCERT)

20 N. Wacker Drive Suite 2850

Chicago, Illinois 60606-3182 (312) 704-5300

www.jrcert.org

The Saint Francis School of Radiography (SFSOR) consistently strives to exceed the minimum requirements for compliance with all *JRCERT Standards for an Accredited Educational Program in Radiography*. In the event that a student has cause for concern that the SOR program may not be in compliance with any standard(s), they are encouraged to report the allegation, in writing, to the Director. The report must be submitted within ten academic days of the event of

alleged non-compliance. The Director will work with the student and any other involved program member in an effort to clarify or resolve the issue of alleged non-compliance. In the event that a satisfactory resolution cannot be attained, the student is encouraged to report the alleged issue of non-compliance directly to the JRCERT.

Resurrection University is also accredited by the Higher Learning Commission (HLC) and the Illinois Board of Higher Ed (IBHE).

JRCERT Standards

Standard One: Integrity

The program demonstrates integrity in the following: representations to communities of interest and the public, pursuit of fair and equitable academic practices, and treatment of, and respect for, students, faculty, and staff.

Standard Two: Resources

The program has sufficient resources to support the quality and effectiveness of the educational process.

Standard Three: Curriculum and Academic Practices

The program's curriculum and academic practices prepare students for professional practice.

Standard Four: Health and Safety

The program's policies and procedures promote the health, safety, and optimal use of radiation for students, patients, and the general public.

Standard Five: Assessment

The program develops and implements a system of planning and evaluation of student learning and program effectiveness outcomes in support of its mission.

Standard Six: Institutional/Programmatic Data

The program complies with JRCERT policies, procedures, and **STANDARDS** to achieve and maintain specialized accreditation.

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Academic Program

Curriculum Overview Radiologic Technology is the art and science of using x-rays to produce images of the bones, organs, and vessels of the human body. Students are educated in utilizing x-ray equipment and techniques, proper patient positioning, radiation protection methodologies, producing quality diagnostic images while practicing excellent patient and family centered care. In conjunction with related didactic courses, students apply their knowledge during integrated clinical experiences in area imaging departments. The Program is five semesters and is approximately 21 months in length. Our curriculum follows the guidelines specified by the American Society of Radiologic Technologists.

Semester 1

- Introduction to Radiography
- Principles of Radiation Protection
- Ethical, Legal and Physical Methods of Patient Care
- Radiographic Procedures I
- Anatomy and Physiology – Skeletal
- Clinical Education I
- **Total Credits: 16.5**

Semester 2

- Principles of Exposure I
- Radiographic Image Processing
- Cross Sectional Anatomy
- Radiographic Procedures II
- Clinical Education II
- **Total Credits: 16.5**

Semester 3

- Radiographic Procedures III
- Exposure II
- Radiographic Physics
- Radiographic Imaging
- Clinical Education III
- **Total Credits: 15**

Semester 4

- Radiographic Procedures IV
- Introduction to Quality Assurance
- Radiation Biology
- Image Presentation and Evaluation
- Computer Applications in Radiography
- Clinical Education IV
- **Total Credits: 15.5**

Semester 5

- Radiographic Procedure V
- Clinical Education V
- Registry Review
- **Total Credits: 7**

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Course Descriptions

Semester 1

Introduction to Radiography - This course orients the new student to Resurrection Health Care and Saint Francis School of Radiography. The student reviews: policies and procedures; basic radiation protection; infection control; fire safety; hazardous wastes; and electrical safety. Content will include introduction of the health care team and the radiologic sciences. Fundamentals of Radiography will be discussed.

Ethical, Legal, Physical Methods of Patient Care - This course will familiarize the student with basic concepts of Patient and Family Centered Care and techniques used in general patient care as it relates to Radiography. It will emphasize the radiographer's role in multiple clinical settings. It will also acquaint the student with the ethical and legal responsibilities of the radiographer as part of the health care team. Consideration for the physical and psychological needs of the patient and family will be reviewed. Routine and emergency patient care procedures are described, as well as infection control procedures using standard precautions.

Radiographic Procedures I - The student is introduced to positioning principles, terminology and topographical landmarks. Anatomy, positioning, proper Patient and Family Centered Care, and radiographic examinations of the thorax, abdomen, and contrast studies are covered. Correlation of radiographs with positioning of the anatomical part for optimal diagnostic images, technique selection, patient pathology, and radiation safety is explored.

Skeletal Anatomy - This course will provide the student with complete understanding of the skeletal system. Bone development will also be covered. Identification of bony anatomy for the upper and lower extremities, thorax, vertebral column, pelvis and skull will be covered as well as function and articulation.

Principles of Radiation Protection - This course will acquaint the student with the principles of radiation protection including different sources of ionizing radiation and hazards involving the technologist, patient, and the general public. Proper protective measures will be introduced. Radiation monitoring and survey equipment are also presented.

Clinical Education I - Using the competency-based education model, students will be supervised with both direct and indirect supervision. Students will gain experience to become competent entry-level radiographers. Students will become acquainted with radiologic imaging procedures addressed in Procedures appropriate Patient and Family Centered Care methods, radiation safety, technique selection, and equipment operation.

Semester 2

Principles of Exposure I - This course is intended to educate the student in factors that affect radiographic exposures and the principles and devices involved in technique formation. Basic fundamentals of exposure, concerned with production and recording of the radiograph image, will be presented. Radiographic quality factors of contrast, density, detail, and distortion will be reviewed. Clinical correlation of these principles through laboratory experience will be explored. This course also focuses on the formulation of radiographic techniques based on established principles, formulas and conversions.

Radiographic Procedures II - The student is introduced to positioning principles, terminology and topographical landmarks. Anatomy, positioning, proper Patient and Family Centered Care, and radiographic examinations of the upper and lower extremities are covered. Correlation of radiographs with positioning of the anatomical part for optimal diagnostic images, technique selection, patient pathology, and radiation safety is explored.

Radiographic Image Processing - This course is designed to acquaint the student with an understanding of the components and operating principles of image processing, basic maintenance and troubleshooting techniques. Radiographic image artifacts will be identified. Content is 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. Film based processing will also be addressed.

Cross Sectional Anatomy - This course is designed to introduce cross sectional anatomy including identification of vital anatomy and physiology presented through lectures and sample radiography. Radiographic anatomy and pathology of head, thorax, and abdomen/pelvis will be presented.

Clinical Education II - Building upon the competency-based education model, students will be supervised with both direct and indirect supervision. Students will continue to become acquainted with radiologic imaging procedures, appropriate Patient and Family Centered Care methods, radiation safety, technique formulation, and equipment operation. Students will complete clinical competencies and objectives taught in Procedures I and II relating to contrast studies and upper extremities.

Semester 3

Principles of Exposure II - This course is intended to educate the student in factors that affect radiographic exposures and the principles and devices involved in technique formation. Radiographic quality factors of contrast, density, detail, and distortion will be reviewed. Beam restriction and radiographic grids will be introduced. The formulation of radiographic technique will be continued. Clinical correlation of these principles through laboratory experience will be explored.

Radiographic Procedures III - Didactic and laboratory education continues with emphasis on the bony thorax and the vertebral column. Correlation of radiographs with positioning of the anatomical part for optimal diagnostic images, technique selection, patient pathology, and radiation safety is explored while maintaining Patient and Family Centered Care.

Clinical Education III - Building upon the competency-based education model, students will be supervised with both direct and indirect supervision. Students will continue to become acquainted with radiologic imaging procedures, appropriate Patient and Family Centered Care methods, radiation safety, technique formulation, and equipment operation. Students will complete clinical competencies and objectives taught in Procedures I, II, and III relating to upper

and lower extremity work, pediatric chest and extremity exams, and vertebral column. Clinical trauma shifts and optional modality choices will be introduced.

Radiographic Physics - This course discusses the fundamental concepts of energy and measurements, atomic structure, electricity, and electromagnetism. It will also discuss circuitry panels, transformers, generators, rectifiers, and mathematical considerations of each. Quality assurance for specific equipment will be addressed.

Radiographic Imaging - This course explores the basic principles of CR, DR, and PACS. The different advanced imaging modalities including Special Procedures (Interventional Radiography-IR), principles of general of tomography, computed tomography, magnetic resonance imaging, nuclear medicine, PET scan, and mammography are presented. Students will explore an area of interest concerning any of the electromagnetic spectrum components through a research paper and oral presentation.

Semester 4

Radiographic Procedures IV - The student continues to study advanced radiographic positioning. Specialized radiographic procedures include radiography cranial and facial studies. Specialty modalities will also be explored. Correlation of radiographs to positioning of the anatomical part for optimal diagnostic images, technique selection, patient pathology, and radiation safety while using Patient and Family Centered Care is explored.

Introduction to Quality Assurance - This course is designed to acquaint students with Quality Assurance and Quality Control and the governing agencies and regulations responsible for monitoring performance. Control measures used within a Radiography Department, quality test tools and methods of application are explored. Fixed and variable kVp systems and AEC devices, image-intensified fluoroscopy, recording media and techniques, will all be addressed

Radiation Biology - This course deals with the effects of ionizing radiation on living tissue, radiation effects on cells and factors affecting cell response. Factors affecting biological responses are presented, including acute and chronic effects of radiation.

Image Presentation and Evaluation - This course is intended to expand the necessary skills to determine a radiograph's acceptability and to learn to correct errors on the image. It is to accustom the student to be independently responsible for assessing radiographic images, and then presenting them to the class. This evaluation will be used to improve radiographs for future studies. Case studies will include chest, abdomen, contrast studies, extremity work, spine, ribs and skull work.

Computer Applications in Radiography - This course gives the student a basic overview of computers in Radiography. It allows for computer review of different programs and previous education components regarding Radiography.

Clinical Education IV - Continuing to build upon the competency-based education model, students will be supervised with both direct and indirect supervision. Students will continue to familiarize themselves with radiologic imaging procedures, appropriate Patient and Family Centered Care methods, radiation safety, technique formulation, and equipment operation. Students will complete clinical competencies and objectives taught in all Procedures courses, including cranial work.

Semester 5

Radiographic Procedures V - The student studies advanced radiographic positioning including specialized contrast studies, trauma, and additional pediatric work. Many non-routine radiographic views are covered. Specialized radiographic procedures include radiography of the selected anatomical systems: urinary, central nervous, reproductive, and other skeletal anatomy. Specialty modalities will also be explored. Correlation of radiographs to positioning with positioning of the anatomical part for optimal diagnostic images, technique selection, patient pathology, and radiation safety, while using Patient and Family Centered Care is explored.

Registry Review - This provides a review of the major content areas appearing in the national certification examination. This course requires class participations, review of radiation protection, equipment operation and maintenance, image production and evaluation, radiographic procedures, and patient care. Students will be given multiple content area examinations and mock registry examinations.

Clinical Education V - Continuing to build upon the competency-based education model, students will be supervised with both direct and indirect supervision, as appropriate. Students will continue to familiarize themselves with radiologic imaging procedures, appropriate Patient and Family Centered Care methods, radiation safety, technique formulation, patient pathology, and equipment operation. Students will complete all clinical competencies and objectives taught in Procedures IV relating to cranial work. Terminal/final competencies assessing the students' progress will also be used as a conclusive evaluation of the student's clinical skills.

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Academic Policies and Procedures

Attendance Policy

Holidays and Academic Attendance Resurrection University has posted the Academic Calendar on the University website. It details information regarding attendance for semester courses including start and end dates, and listing specific days when the University is closed. Students are **not** allowed to complete make-up clinical time on those scheduled University closure days.

Personal Time Off (PTO) It is an essential component of the preparation for this occupation, that the student understands the different aspects of the profession. Absences or time late results in the student being unable to assume responsibility for the patient in the clinical setting. Students are **not** encouraged to attend the education setting when ill as this subjects themselves, their classmates and technologists, as well as their patients, to unnecessary exposure to an illness. Health and wellness of the caregiver are an essential component of the health care team. Each student is allowed one day absence in each: classroom and clinical, without consequences. Each component's policy is explained below.

Breaks There is a break scheduled between each semester. A detailed school calendar includes dates of attendance, eligible holidays and break periods for each year of attendance.

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Excused Absences

Excused absences will consist of the following:

Funeral leave Family funeral leave will not be deducted from the personal time off bank.

- **Five** days of excused absence is granted in case of death in the immediate family (parent, spouse, sibling, or child.) **Three** days granted for grandparents and in-laws. **Two** days for aunts and uncles. **One** day for extended family.
- Other funeral requests will be considered on a per case basis by the Director.
- DOCUMENTATION IS REQUIRED FOR ALL FUNERAL LEAVE.

Jury Duty or Military Duty Must be arranged with Director as soon as the student is aware of the necessary leave. Program requirements must still be met upon return.

Medical Leave and Return to Duty

If a student requires a medical leave, the attending physician must sign consent that the student is capable of performing all of the university technical standards specifically for the radiography program upon return to the clinical education setting. The student will complete all aspects of request of medical per University policy. This is to ensure that patient and student safety are strictly maintained. A student must be in good academic standing to qualify for leave. A student granted a leave must complete all clinical and classroom requirements of the program within one year of the original graduation date, or be subject to dismissal from the program. The student will work with the Clinical Coordinator to make sure that all aspects of the Clinical component that were missed will be reassigned and completed. The student will be given an Incomplete per University policy, until the requirements have been completed. This could result in a delay of completing all graduation requirements.

Classroom Attendance Due to the accelerated pace of the classroom instruction, it is imperative that all classes be attended in order to be adequately prepared. **The student is allowed ONE absence per course.** On the days of the classroom instruction, the “call – in” must be made to the attendance line for recording of attendance purposes. **More than one PTO per semester is considered excessive and therefore is an unexcused absence (and will result in lowering of the overall course grade.)** Individual didactic class attendance will be documented **per class/per day** occurrence. For example, students may not miss more than one class of a particular course without consequences. (See School Grading policy.) There are specific excused absences allowed. All coursework that is missed **must** be made up.

Calling in on a test day results in a 6% lower test grade. Each subsequent day of attendance (clinical or classroom) will result in additional 6% reduction of the test grade. There is a 3% reduction in a test grade if the student takes the exam other than the scheduled time frame. All missed assignments must be turned into the classroom instructor. (See Incomplete Course Work policy.)

Notification of Classroom Absence Notification must be given or the failure to comply will result in an unexcused absence. The student **must** call the Attendance Line 847-316-6126 and may also choose to email the instructor. **Text** messaging is **not** considered an **acceptable method of notification.** In the event of a scheduled PTO, the student may complete a PTO request form and submit it to the Clinical Coordinator for recording. All missed assignments and classroom material must be completed.

Clinical Attendance It is an essential component of the preparation for this occupation, that the student understands the different aspects of the profession. Absences or late arrivals results in the student being unable to assume responsibility for the patient in the hospital setting. As part of the student’s clinical education, he/she must learn to become a dependable patient care giver. The clinical education component is structured so that each rotation has certain requirements that must be met. If a student comes to the classroom or clinical component ill, he/she will be sent home. Students are strongly discouraged from exposing patients, staff, and fellow students to an illness. Time missed will be deducted from the allotted clinical time off.

Maximum of ONE day of clinical absence allowed each semester. Students may use their one day in a total seven-hour block (one full day) or ½ day increments (3.5 hours). (Any ancillary rotation time may **not** be taken off in PTO time. The ancillary rotation time can be switched prior to scheduling, but the rotation must be completed prior to semester end. It is our policy to discourage call-ins on these specific rotation shifts, due to the valuable time spent learning within a limited timeframe).

It is critical for the student to understand that all time taken off should be used with discretion. It is not necessary to use one’s PTO each semester. A student will have an opportunity to bank his/her clinical days off and use them as needed for clinical time. Each occurrence of time off is reflected on the final transcript.

If a student accumulated more than one absence per semester the student will receive the following disciplinary actions:

- | | |
|----------------------------|---|
| 1 st occurrence | - Excused |
| 2 nd occurrence | - Documented notice- reduction in clinical course grade of 3% |
| 3 rd occurrence | - Documented warning-reduction in clinical course grade of an additional 3% (totaling 6%) |
| 4 th occurrence | - Probation and reduction in clinical course grade of an additional 3 (totaling 9%) |

Notification of Clinical Absence

Notification must be given **no later than 15 minutes before the beginning of the assigned shift.** Failure to do so constitutes an **unexcused** absence in the Student Clinical File and must be made up before the end of the clinical semester. For any ancillary rotation assignments, the student must call in to the Department, as well as a Program Official. It is SFSOR policy to discourage call-ins on those shifts, due to the valuable time spent learning. Due to the

limited time in these rotations, it is necessary to fulfill these rotations and must be made up before the end of the semester. Notification **must be** given in two ways. The student must choose to: **(1.)** email or voicemail a school official **and (2.)** they must also call the Attendance Line 847-316-6126. Failure to comply will result in an unexcused absence. **Text** messaging is **not** considered an **acceptable method of notification**. In the event of a scheduled PTO, the student may complete a PTO request form and submit it to the Clinical Coordinator.

Monthly Schedules The clinical obligations of the student are assigned by the school faculty as they complete a monthly schedule. It is written using the master clinical schedules and then the weekend assignments, school holidays and days off are posted as they apply. Schedules are designed not to exceed 40 hours per week. In the event that a PTO request is made during non **PTO** eligible rotations, the student may switch out their schedule with the approval of the clinical instructor.

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Unexcused Absence (Clinical) Failure to report at a scheduled clinical assignment or to give absence notice will result in a record of unexcused absence in the Student Clinical File. Notification of Absence must be communicated prior to the scheduled start time of the clinical assignment. The student will be required to complete the missed clinical assignment at the end of the semester and receive a 3% reduction in the overall clinical grade for that semester.

Unexcused absences may result from:

1. Switching days off without approval of the clinical instructor.
2. Calling in more than the allotted times per semester.
3. Absence of the clinical assignment without notification (prior to the start of clinical assignment) by email or phone call/with voice message to both: Clinical Instructor and Attendance Line 847-316-6126

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Attendance Time Documentation e*Value is the program's electronic clinical record system. It must be used at all times to verify both the beginning and completion of each clinical day of attendance at designated computer stations. Failure to log in or out will result in assumed absences. A clinical instructor must verify time if there is an electronic error that occurred. Failure to log-in three separate times will result in the student owing one additional hour of clinical time. Each subsequent occurrence will keep incurring an additional one hour of time owed.

Falsifying documentation is grounds for dismissal. Students are not allowed to falsely alter their own time tracker or document time for other students. Additionally, logging in from one's personal mobile device is also grounds for dismissal. IP computer addresses will verify students appropriate clock in and out times and locations.

The Clinical Instructors verify attendance weekly. If a student has a question regarding his/her attendance, they may meet with their clinical instructor for clarification. If there is a discrepancy between the two parties, the clinical coordinator will aid in resolving the issue.

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Unscheduled University Closure In the event of the school closing due to weather, power outage, etc., students, faculty, and staff who registered for the Resurrection University alert system will receive either a text message or email message alerting them to this closure. Messages will also be posted to the University website and via automated message at the University's main number 773-252-6464. Any missed assignments will be made up the following meeting with the instructor.

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Communicable Disease/Infection Control If a student is suspected or diagnosed as having a communicable disease or has been exposed to a communicable disease, the student should notify the Program staff. The student must then obtain a written note verifying their good health standing to return to school or school functions. This note must be from their consulted healthcare provider. Examples of communicable disease include but are not limited to: chicken pox, influenza, conjunctivitis, strep throat, and lice. Infection control manuals containing policies and procedures, regarding the infection control program, the employee and student health, isolation procedures, and standard precautions are located in the Departments of Radiology and online on the Presence Health website. Annual education is required to maintain compliance and students are also taught infection control practices in the Patient Care curriculum.

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Compliance of Health and Safety Requirements

Previous to beginning the Introduction to Radiography course, students will be required to complete the electronic assignment for all the New Hire Orientation learning modules that all staff, students and volunteers must complete. Once the students have agreed to comply with the policies and have completed the training, they will be allowed to participate in the Clinical Education setting at all Resurrection University clinical education settings. This serves as orientation for all clinical settings in Presence Health and CFMC. Students will be required to complete each of the modules to familiarize themselves with corporate policies and procedures. Completion of additional yearly training will be needed to remain in compliance. Some specific reviews are: Active Shooter: What You Can Do, Emergency Codes, Emergency Preparedness, Fire Safety, Hazard Communication, Infection Control, Chest Pain Basic Training, Stroke Basic Training, HIPAA, Preventing Harassment in the Workplace.

Workplace Hazards

Resurrection University Clinical Education Settings strive to provide a risk-free environment to its patients, employees, students, and visitors with regards to hazardous materials. Each Imaging Department has procedural manuals, Infection Control manuals, and access to all policies on the Presence Health Intranet and Community First Medical Center Intranet which cover the proper procedures required to provide the safest possible environments. The student has the authority and responsibility to work safely, to report unsafe conditions or equipment to his/her clinical instructor, and to know the safety procedures such as fire and disaster for each assigned clinical site as required. Orientation Treasure Hunt forms for each clinical site are completed to confirm the student is aware of the proper protocols for workplace hazards and safety requirements and location of key items for a Radiology Department. Additionally, students will be instructed in the Patient Care and Introduction to Radiography courses regarding these matters. Students will be required yearly to complete education regarding Fire Safety, General Safety, and Emergency Preparedness among other training modules.

Harassment Policies

Anti-Harassment, Anti-Bullying, Anti-Hazing and Discrimination

Resurrection University prohibits any form of unlawful harassment, bullying, and hazing, and will not tolerate discrimination against any employee or student by anyone, including co-workers, supervisors, students, patients/residents, vendors, visitors, contractors or any other third party. Resurrection University's policies are in alignment with the Mission, Vision and Values and the Catholic Ministry. There are very definite definitions as to what constitutes this harassing conduct that will not be tolerated and are listed in the RESU Academic Catalog. In the event that there are any complaints to be filed regarding Title IX violations, the student may email ResUTitleIX@res.edu.

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Standards of Behavior

The student is expected to conduct him/herself in a professional manner at all times. Students are to practice Patient and Family Centered care at all times while on the hospital premises. All students are required to speak in a low tone and be courteous to patients, medical staff and department personnel. Foul, abusive, or inappropriate language will not be tolerated at any time. Students are not allowed to speak in any patient care setting, where patients are present, any language other than English, unless as an interpreter (following Presence Health policy). In the classroom setting, students will remain courteous to the instructor and other classmates. Behaviors that will not be tolerated are: interrupting others, outbursts or disparaging comments/actions regarding others or sleeping on the hospital premises.

Students must respect the affairs of the school, the hospital and the patient's confidentially, and is not to discuss these matters with other students, family or friends. Confidentiality must be maintained at all times complying with HIPAA laws. This will be addressed throughout the program.

Students are not to leave their assigned area at any time without permission. When not actively engaged in radiographic work or other duties, students will remain in their assigned areas and not congregate in offices, halls, or other rooms. Students should maintain a cooperative and positive attitude without voicing unnecessary complaints. Students should ask for advice when needed. Students should **NEVER** experiment with patients. They should be

inquisitive and ask questions. **They should never repeat** a radiograph unless under the direct supervision of a registered technologist.

The Code of Conduct can be found in its entirety on the University Website in the Academic Catalog. Failure to comply with the Code of Conduct could result in Disciplinary Action (per University policy.)

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Travel

To Clinical Sites

Students are required to travel to all clinical sites within the Chicago land area. Students must have a valid driver's license and/or provide their own form of transportation. School schedules will not be modified to accommodate individual transportation needs. Current clinical sites include (but not limited to) Presence Saint Francis Hospital, Presence Saint Joseph Hospital, Presence Resurrection Medical Center, Presence Saint Mary of Nazareth Medical Center, Community First Medical Center and Weiss Memorial Hospital.

To School Related Activities

Opportunities are available for students to travel to educational and/or other activities during the school year. These are OPTIONAL activities and students may elect to attend and travel to them at their own expense. As these activities are not mandatory, students have the option to attend the regularly scheduled clinical day or the student would choose to complete written assignments (if it were to fall on a classroom attendance day.)

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Grading Policies

Saint Francis School of Radiography offers a full-time, approximately 20 months program in Radiography. There are five semesters composed of classroom and clinical courses. All courses in the curriculum are required. Failure of a course will not allow a student to progress until the course can be successfully repeated. Progression of the curriculum will not continue as courses have prerequisites.

The following **grade scale** is used in all courses:

Grading Scale

	<u>Grade Definition</u>	<u>SFSOR Scale</u>	<u>Grade Points</u>
A	Excellent	100-94	4
B	Good	93-87	3
C	Average	86-80	2
D	Poor, Not Passing	79-75	1
F	Failure	Below 75	0
AU	Audit		0
I	Incomplete		0
W	Withdrawal		0

Classroom Grading

Course Grades are calculated using the following percentages:

- Tests are 85% of final grade (see specific course syllabus)
- Quizzes and homework are 15% of final grade (see specific course syllabus)
- Any grade achieved below an 80% will not be rounded up.
- Final exams are calculated as two test grades. **A student must initially pass 50% of all exams given in each didactic course in order to show successful completion of that course or he/she will be dismissed from the program.** Any failed tests must be repeated (with only the original grade calculated into the final grade.) **If a student cannot satisfactorily pass the test after three attempts, he/she will be dismissed from the program.** A grade of 84% or below on a given exam will determine the need for additional course work.

Attendance Grading Policy

Classroom Grading

Absences of more than one per classroom course will result in a reduction of the overall course grade.

- 2nd occurrence or call-in - reduction in course grade of 3%
- 3rd occurrence or call-in - reduction in course grade of an additional 3% (totaling 6%)
- 4th occurrence or call-in - reduction in course grade of an additional 3% (totaling 9%)

Classroom- All assignments/missed course work must be completed as assigned by instructor. Calling in sick on a test date will result in a grade point reduction of 6%. Each subsequent day (clinical or class) will result in an additional 6% reduction of the test grade. If a student is to miss a scheduled test, it is his/her responsibility to reschedule **prior** to examination (see incomplete course work). Each faculty member will determine the manner in which make-up examination will be handled in his/her course. Repeat examinations will be given at the discretion of the instructor. If a student is unable to take the exam/quiz at the scheduled time of testing, but will in fact still test on that day, a 3% reduction will be assessed.

Student must be on time to all didactic courses. It is necessary to be in attendance when the class begins. The student will be counseled in the event that a pattern of lateness exists. If a student is late more than three times in a semester, there will be a 3% reduction in overall course grade.

Clinical Grading

Clinical Course Evaluations - Each student will be evaluated by their Clinical Instructor at a midpoint of the course. This allows the students the opportunity for improvement in any deficient area. The final evaluation will be a reflection of the mid-semester and will be used as a baseline for evaluation of student progress. At the end of each semester the technologists in the department will also be requested to complete evaluations of the students. Clinical instructors will complete an evaluation for each student. Self- evaluations will be utilized to determine how the student perceives their progress. A semester counseling session will then be scheduled with the student to discuss his/her strengths, weaknesses, and progress in the clinical setting. At this time the student will also have an opportunity to discuss any concerns he/she may have. The student must successfully pass all sections of the clinical requirements to receive a passing grade.

Clinical Grading:

The student's clinical grade will be composed of the following:

Competency Tests	20%
Clinical Instructor Evaluation	40%
eCollege Portfolio	20%
Lab Testing	20 %

Laboratory Competency Evaluations Following the **successful (80%)** classroom testing in the procedures and laboratory practice of positioning in a given category, the student must pass with a **90% or better** without assistance, laboratory competency evaluations in each projection. The competency grade achieved will be recorded and kept in the student's permanent file. Failure to successfully complete this requirement will result in failure of the lab portion of the unit and the student will be given remedial work and an assignment scheduled for retesting in the lab setting. The original lab competency grade stands for grading purposes (but pass of 90% is still necessary to complete the lab requirements.)

Habitual Tardiness

Students with a habitual tardiness will be counseled and put on probation. For each clinical semester:

- **Each** late occurrence will reflect a reduction in key areas of the student evaluation
- **1-4 lates** - will reflect a deduction in key areas listed below
- **5 lates** - will result in the grade deduction below
- **6 lates** - receives a 0% in all areas below

With regards to the Semester Clinical Evaluations, the Clinical Instructor's grading will be affected in the areas of Promptness, Patient Care, Participation, Initiative, and Quantity of Work:

Late Occurrences	Numeric Grade
0	5 - always
1 - 2	4 - almost always
3 - 4	3 - frequently
5	1 - seldom
6 or more	0%

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Incomplete Coursework

Classroom Each semester’s coursework must be successfully completed before the student may progress to the next curricular semester. All course work should be completed by the end of the class day of the due date. For classroom courses: each day results in a 6% reduction for that assignment; after three days the assignment will receive an automatic “0” grade for that assignment. If a student is to miss a scheduled test, it is his/her responsibility to reschedule **prior** to examination. Tests not completed on scheduled date are to be completed the next day of attendance or a subsequent 6% deduction will be added cumulatively, (and each day until a total of four days, where a “0” will be given for the student’s test score for that particular test). The student is responsible for making arrangements with the classroom instructor for the test completion.

Clinical In clinical class settings, failure to complete the required competencies/rotation requirements during that specific time frame will result in an “Incomplete” being awarded. An incomplete grade is awarded when the student needs additional time to complete a course. The incomplete time length will be determined by the instructor, not to exceed one semester in length. If additional time is needed, the student must request an extension which can be reviewed and decided by the Director, Dean or Chief Academic Officer. If a rotation has been missed and must be completed, the same rotation or time frame must be used when completing it. Instances of extended illness or leave of absence, the student may request an incomplete with the Program Director.

Clinical Setting Progression In order to complete the requirements for clinical competency, the student must successfully perform examinations unassisted from each category in the clinical setting. Testing for competency in the clinical setting may occur at any time after the student has passed the laboratory competency tests, but must be completed by the end of the semester. Competency testing must progress in a logical order from first to last categories covered in the classroom/lab setting. Check clinical class syllabus for required competencies.

Upon demonstrating competency in the clinical setting, the student may perform examinations in that category in the clinical setting with limited supervision. The student must demonstrate competency in the clinical setting in all categories by the conclusion of his/her program in order to graduate. Additionally, the student will “re-comp” in particular examinations to reconfirm competency in their radiographic competency (Terminal Competencies and six Program Proficiencies).

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Complaint Policy

Students have the right to address a complaint that is disruptive to their learning environment whether in the classroom or in the clinical setting. Students need to communicate their issues to the attention of the appropriate staff (whether Clinical or Class Faculty.) The Program Director is to be made aware of the said complaint and will document and investigate the grievance. Records will be maintained to assist the Program in providing a learning environment that is conducive to the student’s learning. It will be the responsibility of the program officials to address issues of re-occurrence.

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Student Rights Under FERPA -

The student file includes copies of transcripts, composite clinical competencies, counseling notations, radiation exposure reports, limited admission materials, attendance records, and other pertinent information. These records remain confidential; accordingly (if in print), will remain locked in file cabinets in the school's office. Students must formally petition to examine their record. No student may examine another student's file. Access to student information and transcript acquisition are dictated by the University policy in compliance with FERPA (Family Educational Rights and Privacy Act 1974). The policy is found in University Catalog on its website.

Appearance /Dress Code

The dress code of the program reflects the fact that as a health care institution, professionalism in behavior and dress is expected, at all times. Serving a cross-section of the population, it is believed that conservative clothing and neatness are the most acceptable appearance styles to the majority of the patients and visitors. It is expected that students must be respectful of the environment as hospital guests.

Classroom attire:

- **Appropriate attire** is to be worn. A student may choose to wear their clinical uniform to the classroom but must be in compliance with the **clinical attire policy completely (including shoes)**.
- **Clothing should be safe for the hospital environment, clean, properly fitting, and professional.** All clothing should be appropriate for the professional setting. Modesty and cleanliness are expected of all students relative to length, style, fit and transparency of clothing. Tattoos/body piercings need to be covered when in the hospital setting.
- **Inappropriate attire** includes, but is not limited to: Tops: t-shirts/sweatshirts, tank tops, halters, backless, cropped shirts, clothes with slogans. Pants: sweats, spandex/lycra, jeans/denim of any color, shorts, and bib overalls. Flip-flop shoes are prohibited. Hats or caps are not allowed.
- **A student identification badge must be worn**, with the name visible to others, at all times on the premises of any educational facility. No other pins, buttons, stickers, badges, etc., may be affixed to the badge itself or to the badge clip. The badge must be worn, face out, near the collar, and in an easily visible place at all times while in the hospital setting.

Clinical attire:

Uniforms: Required at all times while in the clinical setting. The student must wear a uniform scrub shirt and pants. The color of the uniform is **Bahama Blue**. The student may also wear a plain white turtleneck or fitted t-shirt underneath the uniform top. Any other visible shirt is unacceptable. T-shirt sleeves may not hang lower than scrub sleeves. The student must also wear either a long white uniform lab coat or a Bahama Blue uniform warm up jacket outside of the Radiology Department. While performing clinical education in the Surgical Suite, **full-length white lab coats are required**. While working in the Radiology Department, the jacket may be removed. **Scrub tops and warm up jackets MUST be embroidered with the School of Radiography in white lettering. Lab coats must have contrasting blue lettering.** Two uniform sets are suggested. Students may never arrive to or leave clinical settings in **hospital-issued** scrubs.

- Professional shoes are recommended although athletic shoes are acceptable providing they are not high top. All shoes must be **white leather** without colored trim or laces (90% white). They must not have the company's logo printed with colors on them. Clogs, "Crocs", and shoes with ventilation holes larger than a pencil point are not acceptable.
- All students need a full-length white lab coat.
- Students must wear RESU ID badges and OSL badges at all times in the clinical setting. OSL badges must be removed when leaving premises. If, in the clinical setting, a student is found in noncompliance with not having their OSLs or ID Badge, the student will be sent home immediately. Time missed must be made up.

At all times:

- Students not in dress code compliance will be sent home to correct the issue in question. Time will be deducted in hour increments from the student's bank.
- Hair should be neat and clean. In clinical setting, hair must be pulled up off the collar. Extreme hairstyles or hair ornaments are not acceptable. Hair, beards, and mustaches should be neat and reasonably trimmed or clean-shaven.
- Jewelry must be kept to a minimum. Large hoop earrings are not allowed. Body adornments including tattoos and facial piercing, excluding earrings must be covered or removed. Excessive adornments are prohibited. Artificial nails are prohibited due to Infection prevention measures. Nails must be conservative in length and need to be neatly manicured.

- Daily hygiene must include clean body, hair and clothes. Deodorant use is encouraged. Clothing must be clean, ironed and in good condition.
- Excessive perfume/cologne and cosmetics are not permitted.

Failure to wear accepted uniform would result in the following:

- Written warning and student sent home to change.
 - Clinical -Time missed must be made up.
 - Classroom- Time missed is considered an absence from that course for the day.

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Student Communications

- **Email** - Students will be assigned a RESU email address. There are computers available for the students to check their RESU email daily- whether clinical or classroom educational settings (if there is not a computer at home to check.) Faculty will not be responsible for information disseminated via email and then not read by the student.
- **RESU Alert System** - Resurrection University will alert the student of an unforeseen school closure. The student will be notified when the school has been closed due to weather conditions or other situations. The student will need to supply contact information to receive the information and keep information updated.
- **Personal phone calls**- are **NOT** to be made or received in the Departments of Radiology while in clinical class, except in the cases of an emergency. All student emergency calls can be directed to the school office at 847-316-5810. **Cell phones may NOT be used during class or clinical time. This includes NO texting or checking of emails on phones during these periods. This is ONLY permissible during scheduled classroom or clinical breaks.**
- Electronic devices such as laptops, notepads, iPads or cell phones may be used for recording of class lectures only. This policy strictly follows the RESU policy regarding responsible use of these items.

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Radiation Safety

It is the goal of this program to keep radiation exposures to the students as low as reasonably achievable. Radiation Protection is an extremely important right of both the student and patient. Students may not make exposures of anyone other than a patient. All exposures using ionizing radiographic equipment are to be made for medically valid reasons, and with a physician's order. Radiation Protection is explained first during Introduction to Radiography orientation and then in the first semester course. The principle of **ALARA** is taught and addressed throughout the educational experience. That principle must be strictly adhered to. In the clinical setting, students must employ gonadal shielding and collimation whenever applicable. When completing competency testing, failure to use the above mentioned devices would result in automatic failure for that given competency. Collimation, gonadal shielding, and exposure techniques will all be evaluated for radiographic competencies when "testing out." Repeat radiographs must be completed under direct supervision of a registered technologist to eliminate the risk of unnecessary radiation dose to the patient. Failure to comply will result in disciplinary action.

Students will adhere to the American Registry of Radiologic Technologists' Code of Ethics; "The Radiologic Technologist utilizes equipment and accessories, employs techniques and procedures, performs services in accordance with accepted standards of practice, and demonstrates expertise in limiting the radiation exposure to the patient, self, and other members of the health care team."

Each student will be issued Optically Stimulated Luminescence Dosimeter monitors (OSL). They are to be worn at all times while in the clinical setting. OSLs must be changed the first day of each quarter. It is the student's responsibility to change the OSL at the proper time. Loss, damage, or accidental exposure to the OSL must be reported to the Clinical Coordinator immediately. OSLs are not to leave the hospital environment. If the student does not have his/her OSL for the clinical day, the student will be sent home and the time missed will be made up. The Radiation Safety Officer and the Clinical Coordinator review quarterly badge reports and will counsel students with unusual or excessive readings. The

current quarterly report is posted in the Clinical Coordinator's office as soon it is received. Both the students and the Clinical Coordinator must initial that they have read the current report. A cumulative exposure report is placed in the student's permanent file upon graduation.

Radiation Protection Policy - Summarized

The responsibility of the student technologist is to maximize the benefit from each x-ray exposure and to minimize the radiation received by the patient.

1. Screening

- Inform patient of risks of ionizing radiation which is dependent on type of procedure.
- Female patients (aged 11-55), are asked of chance of pregnancy possibility and answer documented.
- Documentation of the beginning date of the last menstrual period is required.
- If chance of pregnancy, a pregnancy test is ordered before radiography exam may be started.

2. Technique

- Take time to position the patient properly
- Choose exposure factors based on the patient's body habitus
- Adhere to **As Low As Reasonably Allowable (ALARA)** principles

3. Collimation

- Limit the size of the beam to include only the area of interest
- There is NEVER justification for a beam larger than the image receptor
- Collimation improves image quality
- Collimation may be the single most important element the student can do to protect the patient

4. Gonadal Shielding

- Use gonadal shielding whenever this will not interfere with the diagnosis
- Gonadal shields should be used on any patient in the reproductive years or younger

5. Protecting Yourself

- The student should protect oneself by employing the same techniques used to protect the patient
- Always wear lead apron, thyroid shield (collar), and gloves when appropriate
- NEVER STAND IN THE PRIMARY BEAM!

6. Supervision Level

- **Only perform at the level of competency one has achieved with the correct supervision levels involved.**
- **NEVER repeat a radiograph without the direct supervision of a technologist**
- **Complete levels of supervision are detailed here in Clinical Education section**

7. Personnel Monitoring (OSL)

- Detailed direction on badge placement will be fully explained in the Introduction to Radiography Course.
- If the OSL is inadvertently laundered, it is destroyed. DO NOT THROW IT AWAY. Bring it to the Clinical Coordinator and it will be sent back to the company. A spare OSL will be given until the quarter is finished.
- The OSL cannot be worn while receiving medical or dental x-rays. The OSL is for OCCUPATIONAL dose only.
- The current quarterly report is posted as soon as it is received in the school (approximately within one month of the end of the previous quarter) in the Clinical Coordinator's office and the student needs to review and initial the report. These reports do not share any personal information other than student name.
- Students will be given their individual summary report post-graduation.
- Students should not receive more than 125 mrem/quarter.

8. Overexposure

- Students that receive over this amount will be counseled, and the incident will be discussed with the Radiation Safety Officer and the Clinical Coordinator.
- If the student continues to receive over the recommended dose limits, removal from the clinical area will occur.

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Student Pregnancy

All students will review the Nuclear Regulatory Commissions (NRC) Regulatory Guide 8.13 (enclosed attachment at the end of the Handbook), which outlines prenatal exposure and risks. This document is presented to the student during the

Radiation Protection Course and can also be found on the Internet. Written disclosure of a pregnancy is voluntary. The student also has the option for written withdrawal of declaration at any time. Once declared, the student will meet with the Radiation Safety officer and the Clinical Coordinator to help clarify questions and guidelines when selecting an option.

Option 1: Full leave of absence: The student may select to take a full leave of absence (LOA) from the didactic and clinical classes. This may be for up to one year in length. The student may return the following year at the beginning of the semester that she left the previous year. This option will lengthen the program for the student.

Option 2: A partial leave of absence: The student may select to take a leave of absence from clinical courses but continue in the didactic courses. The student would then return to clinical classes as soon as her physician has given her a fitness duty form. More than three weeks will result in continuation of the program from the beginning of the last semester of partial attendance. She must return to clinical courses within one year of the course departure. This option will lengthen the program for the student.

Option 3: Continuation of the Program: The student may select to continue in the program at the same pace as normally scheduled. She must have a fitness for duty note from her physician. One day of clinical absence is allowed during each semester. The student must meet with the physicist to review Radiation Protection Policies. At this time, the student is given an additional fetal monitor badge to wear for the duration of the pregnancy. The student will continue in all clinical areas as scheduled. Wrap around lead aprons are required to be worn in fluoroscopy and surgical rotations. OSLs will be closely monitored to assure safe fetal dose limits. Department standards policy will be followed. The student may continue in clinical classes until her physician deems her unfit for duty. Program length may be affected dependent upon the student's time requirements for delivery and post- partum. Maximum time for classroom/clinical absence is three weeks without repeating the semester (per Medical Leave policy). All scheduled clinical rotations must be completed and if desired, may be completed or partially completed, prior to Pregnancy Leave.

Program Completion

Graduation Requirements

In order to graduate, the student must meet the following requirements:

1. File the Intent to Graduate Form by the designated deadline.
2. Have official final transcripts of any previous colleges attended on file in the Registrar's Office.
3. Complete the credit hours designated in the curriculum as relevant to the individual's program.
4. Complete the residency requirements.
5. Attain a minimum cumulative grade point average of 2.0.
6. Complete the preparatory pre-licensure/certification requirements.
7. Complete payment of all fees and tuition owed to the University and return all library items.

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Transfer Credits

The Radiography Program does not accept students attempting to transfer from another radiography program or seeking advanced placement in this program. Students desiring to attend this program must proceed through the normal application process and begin at the same program level as other students. Radiography programs vary in how the sequence of curriculum is delivered and therefore the SFSOR program may not necessarily be an exact match as content previously delivered.

Campus Life

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Location and Hours of Operation

The School is currently located at the North campus of Resurrection University and is on the 3rd floor North of Presence Saint Francis Hospital, 355 Ridge Avenue, Evanston, Illinois. The School offices are open from the hours of 7:30am - 4:00pm Monday through Friday. The locker room is open during operational visiting hours of the hospital. The instructors' offices maintain an open door policy so that as instructors are available throughout the day, the students may seek their assistance for counseling or other matters.

The main campus of Resurrection University is at St. Elizabeth Hospital, 1431 N. Claremont Chicago, Illinois and will be the future home of the Saint Francis School of Radiography beginning January 2017. Hours will posted accordingly.

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Resource Center and Computer Labs

The hours of operation of the Resource Center and Computer Labs are Monday through Friday 7:30 am to 4:00 pm, which is consistent with the hours of operation of the School of the North campus of RESU. There are reference texts available for review in the Resource Center. There are computers available for student use in the two computer labs. Appointments can be made when additional time is needed in the facility as well as the practice laboratory. **Eating or drinking is not permitted at any time in the computer labs.** After each use the computer(s) must be logged off. No programs or websites shall remain open as a courtesy to the next user. There is a non-energized practice lab available on the RESU North campus for student practice during normal hours of operation of the school. The RESU main campus also houses the library and resource centers available for student use. In 2016, a new simulation lab was opened for student use and will in 2017, house radiography equipment and accessories as well.

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Student Lockers

At the RESU North campus, each student is assigned a locker in the locker room in the School. Personal locks are required. Combinations of all locks must be kept on file in the program's office. The hospital reserves the right to perform periodic inspections and it is the responsibility of the student to keep the lockers clean. Clinical Instructors will instruct students as to where to secure their personal belongings on the clinical floor. Minimal personal possessions should be brought to the clinical setting. Classroom textbooks may not be brought to the clinical floor for review (except radiographic positioning books.)

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Student Services

The goal of Student Services is to provide students with an exceptional Resurrection University experience. The student services staff provides the services, programs, and experiences that will support students' success at the University. From tutoring and counseling to extracurricular activities and library resources, Student Services wants to ensure that students' academic and personal development needs are met.

SFSOR Academic Advising

Academic: The Program Director and Faculty are available for academic counseling if the student so desires. Counseling will always be confidential and conducted in a positive and constructive fashion. Regular evaluation sessions are scheduled to cover student's strengths, opportunities for growth, and progress in the program. The ACE center houses additional academic counselor resources.

Wellness: Wellness Counseling is offered on both campuses for those students seeking additional support from the Counselors.

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Parking

Presence Health policy requires that all students and staff are required to park their vehicles on hospital property and also require proper display of vehicle decal. All parking questions should be directed to security at the particular clinical setting, as appropriate. The Coordinator of Student Services may also assist with specific issues. Specific parking policies apply as appropriate for each non-Presence Health locations.

Campus Safety and Security

Hospital security personnel are present at each hospital. Upon request, security guards can be available to escort students to their vehicles. Security can be quickly notified in case of emergency by dialing the code 8888 in a Presence Health facility. Each clinical education setting is responsible for giving information regarding contacting security.

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Clinical Education

Clinical Obligations, Hours, and Rotations To provide learning situations for a student to be clinically competent as well as having a general understanding of the many areas of diagnostic imaging, students will complete many clinical rotations during the course of the 21-month program. Clinical and classroom classes will not exceed 40 hours per week.

The time of day and days of the week may vary upon the clinical semester. The hours change as the clinical competencies of the students' increase. Clinical hours are as follows:

Day shift (Mon-Fri) 8:00 AM to 3:30 PM

PM - Trauma shift rotations (Mon, Wed, Fri.) 12:30 PM to 8:00 PM - (four rotations total or 12 days in the program)

Weekend - Trauma shift rotation (Fri. & Sat. Evening) 2:00 PM to 9:00 PM - (one rotation total or two days)

Clinical schedules define a week from Sunday through the following Saturday. Students are responsible for checking their own schedules. The time and rotation scheduled **MUST** be adhered to. The Clinical Instructors, prior to the scheduled date, must approve all schedule changes.

If the student is scheduled for weekend clinical experience, he/she receives days off during the week so that 40 hours per week is not exceeded. All days off are arranged around didactic class schedules. Students are not to be substituted for the paid labor of a technologist. The school believes that the variety of shifts included in the program benefits the student in two ways:

A. It creates a well-rounded radiographer with experience gained not only in routine examinations but also in caring for emergency room patients and adhering to trauma protocols... It allows the student to acquire increased responsibilities and utilization of judgment under the supervision of a technologist.

B. Because not all Radiography employment consists of daytime hours, the opportunity to experience the variety of shifts is provided. This enables the students to experience the different working environments. Trauma and emergency radiography occurs throughout the entire day. Work flows in radiology are dependent on the type of weather conditions, social and recreational activities that people experience. Changing the hours of clinical operation enables the students to experience a variety of patients and examinations in different volumes.

In educating a well-rounded radiographer, it is necessary to cross-train our students. Students will complete classroom instruction and practicum in sterile and aseptic technique, transfer of patients, care of medical equipment, phlebotomy, vital signs, and CPR.

During the program, the student will have the opportunity to experience all phases of Radiology and its related fields. Listed below are the areas that students rotate through:

General Radiography	Fluoroscopy
Surgery	Reception Desk
Cardiac Cath/Special Procedures	Portable/Mobile Work
Computerized Tomography (CT)	Charge Desk/Patient Control
Emergency Department	

Optional Observational Rotations Include:

Nuclear Medicine	Radiation Therapy
Ultrasound (USD)	PET Scan
Magnetic Resonance (MRI)	Mammography

General Plan of Clinical Education

The primary objective of this aspect of education is to enable the student to demonstrate competency in all phases of Radiography through a balanced clinical education. Competency based instruction is believed to be the most effective method to achieve this objective. This type of instruction allows the student to progress in both the cognitive and psychomotor areas at a rate consistent with his/her individual ability and knowledge.

The student's clinical education will proceed as follows:

- 1. Orientation** – Students will orient themselves to the Imaging Department during semester one. During this time, Radiography rooms, equipment, supplies, crash carts, bathrooms, dressing rooms, doctors' offices, administrative offices and all aspects of department operation will be pointed out and discussed. Policy and procedures, including health and safety of students, staff, and patients are identified and reviewed. Treasure hunt check sheets are also used to verify that each student acknowledges each specific area.
- 2. Observation** – Students will become oriented and familiar with the examinations and department operations on a daily basis. During this period the student will rotate through the fluoroscopic rooms, general radiographic rooms, reception desk, patient control area, and portable examinations. The student will become acquainted with the policies and procedures of the Imaging Department and the hospital. The student will participate passively through observing procedures during this time and participating with technologist assistance in patient care at their introductory level of competence.
- 3. Positioning with Direct Supervision** – Successful completion of the didactic instruction and testing with accompanying lab practices allows advancement to the next phase. After successfully passing the laboratory proficiency examinations in a particular category, the student may perform any examination in that category under a radiographer's direct supervision. Pediatric, portable, and surgical radiographic examinations **must always** be completed under direct supervision of a registered technologist, as specified in The School of Radiography supervision policies.
- 4. Positioning with Indirect Supervision** - This phase of clinical education will begin as the student has successfully passed the competency requirement in a specific category. (See Competency Instruction) At this time, the student will be able to perform the procedures in that category with limited supervision. Students must still verify patient status and specific patient identifiers with technologist. Students are not allowed to independently end the exam status on Electronic Medical Record.

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Supervision Requirements

Direct Supervision

Direct supervision assures patient safety and proper educational practices. The JRCERT defines direct supervision as student supervision by a qualified radiographer who:

- Reviews the procedure in relation to the student's achievement,
- Evaluates the condition of the patient in relation to the student's knowledge and abilities,
- Is physically present during the conduct of the procedure, and
- Reviews and approves the procedure and/or image.

Students must be directly supervised in all pediatric, portable and surgery cases. Additionally, students will also be in direct supervision until competency is achieved.

Indirect Supervision

Indirect supervision promotes patient safety and proper educational practices. The JRCERT defines indirect supervision as that supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement.

Immediately Available is interpreted as the physical presence of a qualified radiographer adjacent to the room or location where a radiographic procedure is being performed. This availability applies to all areas where ionizing radiation equipment is in use on patients

Qualified Practitioner is defined as “a radiographer possessing American Registry of Radiologic Technologists certification or equivalent and active registration in the pertinent discipline and practicing in the profession.”

Competency - The student has completed formal classroom lecture on the procedure, successfully passed a written test, shown proficiency in the laboratory with the Clinical Instructors. The student may now complete this examination in the department with indirect supervision, except pediatric work, portable work, or surgical procedures.

Repeat Radiographs - The presence of a qualified radiographer during the repeat of an unsatisfactory image assures patient safety and proper educational practices. A qualified radiographer must be physically present during the conduct of a repeat image and must approve the student’s procedure prior to re-exposure. Repeat radiographs must be recorded on the student daily log.

All unsatisfactory radiographs must be repeated in the presence of a registered technologist. **No exceptions will be tolerated.**

***Note: Students are not permitted to ever independently check an image or dismiss a patient.**

Students are not permitted to ever independently repeat a radiograph.

Students are not permitted to hold an image receptor plate during any radiographic exposure.

Students are not permitted to hold or restrain patients during any radiographic exposure.

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Competency Instruction The student must achieve two levels of competency during clinical education. First, cognitive abilities will be demonstrated through testing material presented in the lectures and the laboratory demonstrations. Second, the radiographic routines introduced in the lectures and lab setting will also determine competency at this level. After this is achieved, the student will be allowed to work on these competencies in the clinical setting under supervision (defined below).

Laboratory Setting - There are Radiographic Procedures positioning lectures throughout the entire program. Lectures in the procedure courses will consist of audiovisual presentations with commentary and demonstrations. The student will then have the opportunity to practice the positions introduced in the unit during laboratory time and at the clinical setting with the Clinical Instructor. A lab grade will be averaged with the corresponding clinical class grade and will be based on proficiency in executing the positions introduced in the class. Concurrently, participation in the clinical areas will move from a passive mode to a more active mode of assisting the technologist with the examinations the student has learned.

1. Laboratory Competency Evaluations - Following the **successful (80%)** classroom testing in the procedures and laboratory practice of positioning in a given category, the student must pass with a **90% or better** without assistance, laboratory competency evaluations in each projection. The competency grade achieved will be recorded and kept in the student's permanent file. Failure to successfully complete this requirement will result in failure of the lab portion of the unit and the student will be given remedial work and an assignment scheduled for retesting in the lab setting. The original lab competency grade stands for grading purposes (but pass of 90% is still necessary to complete the lab requirements; although it is not included in the averaging of the final grade for that section.) The student who does not place an anatomical positioning marker (R or L) or does not place a gonadal shield on the “patient” will be given an automatic failure for that projection.

In a category such as upper extremities, each anatomical section must be successfully “comp-ed” out before the student will attain completion. Example: Wrist AP, Lateral, and Oblique projections are needed to achieve competency for a routine wrist series. If a projection is failed, the student must do a homework assignment and then retest competency in that projection only. Original grade of the three projections totaled together represents the student’s final grade. The student may continue testing competency in all other upper extremities, but will not be considered competent until all projections have been completed. Successful completion allows the student to test their competency in a given examination. All laboratory work must be completed by predetermined dates. Absence from scheduled lab testing will result in completing testing at the end of scheduled lab testing period for the clinical group.

Upon demonstrating competency in the laboratory, the student will be allowed to perform those examinations in that category in the clinical setting under the direct supervision of a technologist. Specific radiographic examinations in chest, abdominal and spinal work will need to have specified numbers of acceptable pre-competency observations by the Clinical Instructor before they are allowed to be graded for a final numeric calculation. No student should attempt any radiographic procedures in the clinical setting unless they have been tested on it in the classroom and laboratory, then only under the direct supervision of a technologist.

2. Clinical Setting In order to complete the requirements for clinical competency, the student must successfully perform examinations unassisted from each category in the clinical setting. In specific semesters, students must achieve a predetermined number of pre-competency checks to assess ability before testing competency for a grade. Testing for competency in the clinical setting may occur at any time after the student has passed the laboratory competency tests, but must be complete by the end of the semester. Competency testing must progress in a logical order from first to last categories covered in the classroom/lab setting. Semester One competencies must be completed under the Direct Supervision of the Clinical Instructor only. The following semesters' competency examinations may be completed under the "direct supervision" of a staff radiographer or clinical instructor. Staff radiographers will then have an additional sheet to fill out attesting to the student's performance (markers used, shielding placed, AIDET principles followed, etc.) but, will not make the determination of any grading. Check clinical class syllabus for required competencies. Students not completing competencies by the end of the clinical class will not receive passing or complete clinical grades unless specific arrangements are made with the Director regarding a Leave of Absence.

Upon demonstrating competency in the clinical setting, the student may perform examinations in that category in the clinical setting with limited supervision. The student must demonstrate competency in the clinical setting in all categories by the conclusion of his/her program in order to graduate. Additionally, the student will "re-comp" in particular examinations to reconfirm competency in specific radiographic competencies. All ARRT Competency Requirements are published on the ARRT website (see attachment at the end of the catalog).

Pertaining to laboratory and clinical competency testing, it is important to note: A 2.5 time limit per projection will be enforced. The timing will begin with the initial positioning of the patient. A time exceeding 2.5 minutes will result in the student requiring remedial work. Passing clinical competency grades will be included in the student's clinical grade. The student must pass with a **90% or better** without assistance.

Student Responsibility - All examinations that the student wishes to be competency graded on will need to be submitted to the Clinical Instructor within one week of that given examination. Failure to do so will result in a "non-graded" examination. Students will also record participation in their radiography exams on the Clinical Log Sheets. The purpose of these log sheets is to facilitate review of the student work by the clinical instructor. These sheets are not to be used for the purpose of grading a radiograph that the student completed prior to the one week limitation.

In performing fluoroscopic cases, when overhead radiographs are not ordered, the student must satisfactorily perform two complete cases of the same type exam for compliance of the testing competency requirement. The grade given will be pass or fail only. To satisfy the original requirement, the student **must show** proficiency of the required missing incomplete exams by graduation.

Magnetic Resonance Imaging (MRI) is a noninvasive medical test, using a powerful **magnetic** field, radio frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures. Various implants and devices have been deemed unsafe in the magnetic resonance environment. Students with these implants or devices in their bodies are contraindicated for the MRI clinical setting. It is imperative that all students are properly screened and educated prior to any clinical experience as a MRI clinical rotation.

MRI Safety - In order to maintain a controlled safe environment for students of the Saint Francis School of Radiography, it is required that each student complete a MRI Scan Questionnaire. Completion of the forms and review by the Clinical Coordinator of the Program and the lead MR Technologist of Presence Saint Francis Hospital (if necessary) will allow the student to participate in the clinical setting. The forms will be placed in the student's clinical folder. No student will be

allowed to participate in any MRI clinical experience without completion of the form and the education component. Each clinical setting has the right to ask the student for an additional questionnaire to be filled out prior to the MRI clinical experience.

Clinical Education Portfolios eCollege Students will be required to complete an electronic portfolio. There will be bi-weekly discussions and assignments based on current and past learning experiences. The portfolio is worth 20 % of the clinical grade. Included in the portfolio are research assignments, personal goals, critical thinking and problem solving questions and scenarios, personal learning experiences, and image critique.

Image Markers Each student will be given a right and left identification marker, which must be used on each image taken. The student will be provided with a permanent marker set with their initials during the first semester. If markers are lost, contact school faculty and additional markers will be provided at the student's expense. Every radiograph taken by a technologist or student must contain an identification marker. It is a legal requirement.

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Computer Access Protocols for Clinical Setting

Each clinical site requires its employees to use an individual sign-on when using the computer. Once signed on, each task the computer undertakes is tracked. This means that each person is responsible for what they do when signed onto the system. Each student will be given their own sign-on for the computer while in clinical education setting. Access to each setting will be given by the Clinical Coordinator and the IS department of the location (hospital system).

It is expected that the computer will be used for clinical purposes only such as EVALUATE, PACS, or Patient Tracking Information. Checking email is allowed only after permission has been obtained by a clinical instructor. Students should not perform any computer task under another individual's log-in. This is a serious issue and could result in disciplinary actions if not adhered.

To maintain compliance with HIPAA guidelines, all images reviewed and assessed by the Saint Francis School of Radiography students and faculty, must be directly related to current course material. There will be no un-authorized printing of radiographic images. All printed images must be printed without patient demographics and must be reviewed by SFSOR faculty. The faculty may review and utilize images for evaluation, instruction, testing, and/or grading purposes. All images reproduced by program faculty must have patient demographics removed.

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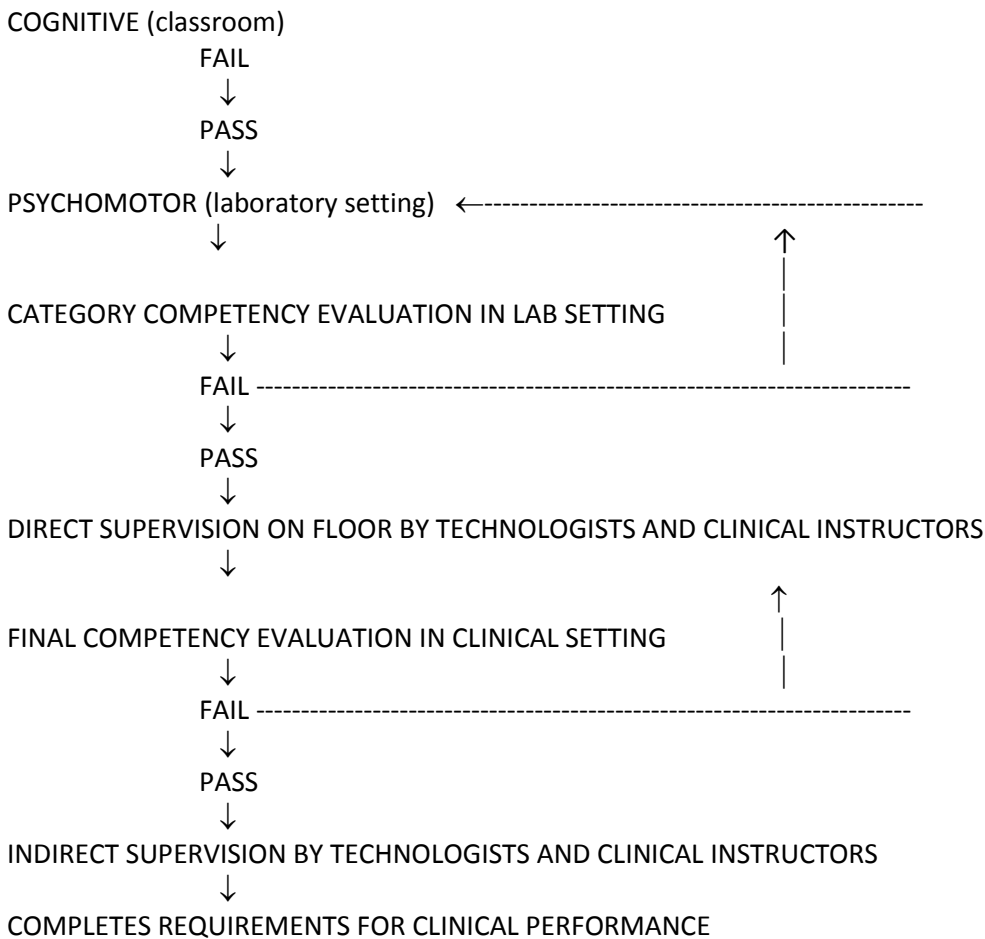
Technical Standards Requirement

To perform as a Radiographer, the student must have the physical capabilities to meet the standards listed below. The student must be able to:

- visually inspect radiographs to evaluate quality and patient positioning.
- communicate with patients and staff (verbally and audibly).
- participate in didactic classes using verbal and written English formats.
- stand/walk up to 8 hours per day providing patient care and diagnostic testing in the clinical setting.
- utilize computer and Radiographic room control panels.
- climb on step stool to position patients.
- lift and carry patients when assisting in transfers from wheelchairs, carts, and beds.
- carry cassettes and supplies up to 15 pounds.
- wear full length lead aprons up to 5 pounds.
- reach and stoop to maneuver equipment and patients.
- position patients and operate equipment (stationary and mobile) simultaneously by using bilateral gross and fine motor dexterity.
- document treatment in written form.
- communicate verbally with patients, families, nurses, physicians, staff, and other students as well as possess good vision and hearing.

Students with Disabilities must follow the "Students with Disabilities" section in the University Handbook for accommodations where appropriate.

SAINT FRANCIS SCHOOL OF RADIOGRAPHY CLINICAL EDUCATION FLOW CHART



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Clinical Competencies per semester

Students are required to demonstrate competency on certain exams during five semesters in order to pass the class and move on to the next semester. Those who do not pass the clinical semester do not start the next until all assignments are completed (Incomplete Policy.) The standard school grading policy is in affect for all competency exams, except the terminal competencies. At the beginning of the semester the students are issued a clinical “folder” and eCollege assignments. These include the syllabus which contains all the information that is needed to pass that semester as well as the clinical competency forms and check sheets. The student is responsible for completing all assignments during their clinical class and submitting a completed “folder” to faculty prior to the semester end to have clinical grades calculated. Students must have completed all assignments prior to end of the semester scheduled conference with Clinical Instructor.

Students must complete the Clinical Education Requirements of:

Semester One

Check sheets:

- General Radiography
- Fluoroscopy

- Orientation (includes treasure hunt, reception /front desk, charge person/ patient flow)
- Portable

Competencies:

- CXR – PA & Lateral
- CXR – cart/wheelchair
- ABD – PA & AP
- Any additional chest or abdomen projection

Clinical Education Portfolio 1

Semester Two

Checksheets:

- General Radiography
- Fluoroscopy
- Orientation checksheets
- Portable
- Surgical 1

Competencies:

- Contrast studies
- Portable – Chest & ABD
- Upper extremities

Clinical Education Portfolio 2

Personal Goals- Set and Achieved

Semester 3

Checksheets:

- General Radiography
- Fluoroscopy
- Orientation checksheets
- Portable
- Surgical 2
- Evening Trauma
- CT and case study – CT exam requirements

Competencies:

- Additional upper extremities
- Lower extremities
- Any extremity elective exams
- Lower extremity trauma – (completed by end of Semester 4)
- Upper extremity trauma – (completed by end of Semester 4)
- 1 Portable orthopedic exam
- Pediatric chest or extremity (both completed by the end of Semester 4)
- Vertebral competencies (based on Procedures course)

Clinical Education Portfolio 3

Personal Goals- Set and Achieved

Semester 4

Checksheets:

- General Radiography
- Fluoroscopy
- Orientation checksheets

- Portable
- Surgical 3
- Evening Trauma
- Weekend Trauma
- Interventional radiography (and case study)
- Optional rotation

Competencies:

- Completion of Vertebral competencies
- Bony Thorax
- Pediatric chest and extremity (both completed by the end of Semester 4)
- Surgical bone competency
- Trauma upper and lower extremity
- Additional extremity competencies (not completed previously)
- Skull competencies (based on Procedures course)
- CT brain, chest, and abdomen/pelvis

Clinical Education Portfolio 4

Personal Goals- Set and Achieved

Semester 5

Checksheets:

- General Radiography
- Fluoroscopy
- Orientation checksheets
- Portable
- Surgical 4
- Evening Trauma
- Optional rotation

Competencies:

- Cranial competencies
- Complete all extremity work
- Surgical non-orthopedic c-arm case
- Terminal competencies (recomp's)
- **Complete any exam competency to meet graduation requirements**

Clinical Education Portfolio 5

Personal Goals- Set and Achieved

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The Admission Process, Enrollment Information, and Financial Information are available on the RESU website.

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CLINICAL PRECEPTORS

Clinical preceptors have been appointed at each clinical setting to ensure quality education to ensure that our students a quality education at all times in the clinical environment. The Clinical Instructors will work with the preceptors to maintain a positive encouraging environment based upon the Saint Francis School of Radiography Technologist Guide to

Student Clinical Policies. All preceptors and staff technologists acknowledge through their signature that they agree to adhere to the policies published therein.

These individuals are committed to providing a professional atmosphere that will enhance the educational experience for student learning outcomes. Additionally, the technologists, radiologists, residents, and other staff members at each clinical education setting will provide learning opportunities for our students.

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Regulatory Guide 8.13 - Instruction Concerning Prenatal Radiation Exposure
(Draft was issued as DG-8014)

Revision 3
June 1999 [Availability Notice](#)

A. INTRODUCTION

The Code of Federal Regulations in [10 CFR Part 19](#), "Notices, Instructions and Reports to Workers: Inspection and Investigations," in [Section 19.12](#), "Instructions to Workers," requires instruction in "the health protection problems associated with exposure to radiation and/or radioactive material, in precautions or procedures to minimize exposure, and in the purposes and functions of protective devices employed." The instructions must be "commensurate with potential radiological health protection problems present in the work place."

The Nuclear Regulatory Commission's (NRC's) regulations on radiation protection are specified in [10 CFR Part 20](#), "Standards for Protection Against Radiation"; and [Section 20.1208](#), "Dose to an Embryo/Fetus," requires licensees to "ensure that the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv)." Section 20.1208 also requires licensees to "make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman." A declared pregnant woman is defined in [10 CFR 20.1003](#) as a woman who has voluntarily informed her employer, in writing, of her pregnancy and the estimated date of conception.

This regulatory guide is intended to provide information to pregnant women, and other personnel, to help them make decisions regarding radiation exposure during pregnancy. This Regulatory Guide 8.13 supplements [Regulatory Guide 8.29](#) , "Instruction Concerning Risks from Occupational Radiation Exposure" (Ref. 1), which contains a broad discussion of the risks from exposure to ionizing radiation.

Other sections of the NRC's regulations also specify requirements for monitoring external and internal occupational dose to a declared pregnant woman. In [10 CFR 20.1502](#), "Conditions Requiring Individual Monitoring of External and Internal Occupational Dose," licensees are required to monitor the occupational dose to a declared pregnant woman, using an individual monitoring device, if it is likely that the declared pregnant woman will receive, from external sources, a deep dose equivalent in excess of 0.1 rem (1 mSv). According to Paragraph (e) of [10 CFR 20.2106](#), "Records of Individual Monitoring Results," the licensee must maintain records of dose to an embryo/fetus if monitoring was required, and the records of dose to the embryo/fetus must be kept with the records of dose to the declared pregnant woman. The declaration of pregnancy must be kept on file, but may be maintained separately from the dose records. The licensee must retain the required form or record until the Commission terminates each pertinent license requiring the record.

The information collections in this regulatory guide are covered by the requirements of [10 CFR Parts 19](#) or [20](#), which were approved by the Office of Management and Budget, approval numbers 3150-0044 and 3150-0014, respectively. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

B. DISCUSSION

As discussed in [Regulatory Guide 8.29 \(Ref. 1\)](#), exposure to any level of radiation is assumed to carry with it a certain amount of risk. In the absence of scientific certainty regarding the relationship between low dose exposure and health effects, and as a conservative assumption for radiation protection purposes, the scientific community generally assumes that any exposure to ionizing radiation may cause undesirable biological effects and that the likelihood of these effects increases as the dose increases. At the occupational dose limit for the whole body of 5 rem (50 mSv) per year, the risk is believed to be very low.

The magnitude of risk of childhood cancer following in utero exposure is uncertain in that both negative and positive studies have been reported. The data from these studies "are consistent with a lifetime cancer risk resulting from exposure during gestation which is two to three times that for the adult" (NCRP Report No. 116, Ref. 2). The NRC has reviewed the available scientific literature and has concluded that the 0.5 rem (5 mSv) limit specified in [10 CFR 20.1208](#) provides an adequate margin of protection for the embryo/fetus. This dose limit reflects the desire to limit the total lifetime risk of leukemia and other cancers associated with radiation exposure during pregnancy.

In order for a pregnant worker to take advantage of the lower exposure limit and dose monitoring provisions specified in [10 CFR Part 20](#), the woman must declare her pregnancy in writing to the licensee. A form letter for declaring pregnancy is provided in this guide or the licensee may use its own form letter for declaring pregnancy. A separate written declaration should be submitted for each pregnancy.

C. REGULATORY POSITION

1. Who Should Receive Instruction

Female workers who require training under [10 CFR 19.12](#) should be provided with the information contained in this guide. In addition to the information contained in [Regulatory Guide 8.29 \(Ref. 1\)](#), this information may be included as part of the training required under [10 CFR 19.12](#).

2. Providing Instruction

The occupational worker may be given a copy of this guide with its Appendix, an explanation of the contents of the guide, and an opportunity to ask questions and request additional information. The information in this guide and Appendix should also be provided to any worker or supervisor who may be affected by a declaration of pregnancy or who may have to take some action in response to such a declaration.

Classroom instruction may supplement the written information. If the licensee provides classroom instruction, the instructor should have some knowledge of the biological effects of radiation to be able to answer questions that may go beyond the information provided in this guide. Videotaped presentations may be used for classroom instruction. Regardless of whether the licensee provides classroom training, the licensee should give workers the opportunity to ask questions about information contained in this [Regulatory Guide 8.13](#). The licensee may take credit for instruction that the worker has received within the past year at other licensed facilities or in other courses or training.

3. Licensee's Policy on Declared Pregnant Women

The instruction provided should describe the licensee's specific policy on declared pregnant women, including how those policies may affect a woman's work situation. In particular, the instruction should include a description of the licensee's policies, if any, that may affect the declared pregnant woman's work situation after she has filed a written declaration of pregnancy consistent with [10 CFR 20.1208](#).

The instruction should also identify who to contact for additional information as well as identify who should receive the written declaration of pregnancy. The recipient of the woman's declaration may be identified by name (e.g., John Smith), position (e.g., immediate supervisor, the radiation safety officer), or department (e.g., the personnel department).

4. Duration of Lower Dose Limits for the Embryo/Fetus

The lower dose limit for the embryo/fetus should remain in effect until the woman withdraws the declaration in writing or the woman is no longer pregnant. If a declaration of pregnancy is withdrawn, the dose limit for the embryo/fetus would apply only to the time from the estimated date of conception until the time the declaration is withdrawn. If the declaration is not withdrawn, the written declaration may be considered expired one year after submission.

5. Substantial Variations Above a Uniform Monthly Dose Rate

According to [10 CFR 20.1208\(b\)](#), "The licensee shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in paragraph (a) of this section,"


that is, 0.5 rem (5 mSv) to the embryo/fetus. The National Council on Radiation Protection and Measurements (NCRP) recommends a monthly equivalent dose limit of 0.05 rem (0.5 mSv) to the embryo/fetus once the pregnancy is known (Ref. 2). In view of the NCRP recommendation, any monthly dose of less than 0.1 rem (1 mSv) may be considered as not a substantial variation above a uniform monthly dose rate and as such will not require licensee justification. However, a monthly dose greater than 0.1 rem (1 mSv) should be justified by the licensee.

D. IMPLEMENTATION

The purpose of this section is to provide information to licensees and applicants regarding the NRC staff's plans for using this regulatory guide.

Unless a licensee or an applicant proposes an acceptable alternative method for complying with the specified portions of the NRC's regulations, the methods described in this guide will be used by the NRC staff in the evaluation of instructions to workers on the radiation exposure of pregnant women.

REFERENCES

1. USNRC, "Instruction Concerning Risks from Occupational Radiation Exposure," [Regulatory Guide 8.29, Revision 1](#) , February 1996.
 2. National Council on Radiation Protection and Measurements, *Limitation of Exposure to Ionizing Radiation*, NCRP Report No. 116, Bethesda, MD, 1993.
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APPENDIX: QUESTIONS AND ANSWERS CONCERNING PRENATAL RADIATION EXPOSURE

1. Why am I receiving this information?
The NRC's regulations (in 10 CFR 19.12, "Instructions to Workers") require that licensees instruct individuals working with licensed radioactive materials in radiation protection as appropriate for the situation. The instruction below describes information that occupational workers and their supervisors should know about the radiation exposure of the embryo/fetus of pregnant women.
The regulations allow a pregnant woman to decide whether she wants to formally declare her pregnancy to take advantage of lower dose limits for the embryo/fetus. This instruction provides information to help women make an informed decision whether to declare a pregnancy.
2. If I become pregnant, am I required to declare my pregnancy?
No. The choice whether to declare your pregnancy is completely voluntary. If you choose to declare your pregnancy, you must do so in writing and a lower radiation dose limit will apply to your embryo/fetus. If you choose not to declare your pregnancy, you and your embryo/fetus will continue to be subject to the same radiation dose limits that apply to other occupational workers.
3. If I declare my pregnancy in writing, what happens?
If you choose to declare your pregnancy in writing, the licensee must take measures to limit the dose to your embryo/fetus to 0.5 rem (5 millisievert) during the entire pregnancy. This is one-tenth of the dose that an occupational worker may receive in a year. If you have already received a dose exceeding 0.5 rem (5 mSv) in the period between conception and the declaration of your pregnancy, an additional dose of 0.05 rem (0.5 mSv) is allowed during the remainder of the pregnancy. In addition, 10 CFR 20.1208, "Dose to an Embryo/Fetus," requires licensees to make efforts to avoid substantial variation above a uniform monthly dose rate so that all the 0.5 rem (5 mSv) allowed dose does not occur in a short period during the pregnancy.
This may mean that, if you declare your pregnancy, the licensee may not permit you to do some of your normal job functions if those functions would have allowed you to receive more than 0.5 rem, and you may not be able to have some emergency response responsibilities.
4. Why do the regulations have a lower dose limit for the embryo/fetus of a declared pregnant woman than for a pregnant worker who has not declared?
A lower dose limit for the embryo/fetus of a declared pregnant woman is based on a consideration of greater sensitivity to radiation of the embryo/fetus and the involuntary nature of the exposure. Several scientific advisory groups have recommended (References 1 and 2) that the dose to the embryo/fetus be limited to a fraction of the occupational dose limit.
5. What are the potentially harmful effects of radiation exposure to my embryo/fetus?
The occurrence and severity of health effects caused by ionizing radiation are dependent upon the type and total

- dose of radiation received, as well as the time period over which the exposure was received. See Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Exposure" (Ref. 3), for more information. The main concern is embryo/fetal susceptibility to the harmful effects of radiation such as cancer.
6. Are there any risks of genetic defects?
- Although radiation injury has been induced experimentally in rodents and insects, and in the experiments was transmitted and became manifest as hereditary disorders in their offspring, radiation has not been identified as a cause of such effect in humans. Therefore, the risk of genetic effects attributable to radiation exposure is speculative. For example, no genetic effects have been documented in any of the Japanese atomic bomb survivors, their children, or their grandchildren.
7. What if I decide that I do not want any radiation exposure at all during my pregnancy?
- You may ask your employer for a job that does not involve any exposure at all to occupational radiation dose, but your employer is not obligated to provide you with a job involving no radiation exposure. Even if you receive no occupational exposure at all, your embryo/fetus will receive some radiation dose (on average 75 mrem (0.75 mSv)) during your pregnancy from natural background radiation.
- The NRC has reviewed the available scientific literature and concluded that the 0.5 rem (5 mSv) limit provides an adequate margin of protection for the embryo/fetus. This dose limit reflects the desire to limit the total lifetime risk of leukemia and other cancers. If this dose limit is exceeded, the total lifetime risk of cancer to the embryo/fetus may increase incrementally. However, the decision on what level of risk to accept is yours. More detailed information on potential risk to the embryo/fetus from radiation exposure can be found in References 2-10.
8. What effect will formally declaring my pregnancy have on my job status?
- Only the licensee can tell you what effect a written declaration of pregnancy will have on your job status. As part of your radiation safety training, the licensee should tell you the company's policies with respect to the job status of declared pregnant women. In addition, before you declare your pregnancy, you may want to talk to your supervisor or your radiation safety officer and ask what a declaration of pregnancy would mean specifically for you and your job status.
- In many cases you can continue in your present job with no change and still meet the dose limit for the embryo/fetus. For example, most commercial power reactor workers (approximately 93%) receive, in 12 months, occupational radiation doses that are less than 0.5 rem (5 mSv) (Ref. 11). The licensee may also consider the likelihood of increased radiation exposures from accidents and abnormal events before making a decision to allow you to continue in your present job.
- If your current work might cause the dose to your embryo/fetus to exceed 0.5 rem (5 mSv), the licensee has various options. It is possible that the licensee can and will make a reasonable accommodation that will allow you to continue performing your current job, for example, by having another qualified employee do a small part of the job that accounts for some of your radiation exposure.
9. What information must I provide in my written declaration of pregnancy?
- You should provide, in writing, your name, a declaration that you are pregnant, the estimated date of conception (only the month and year need be given), and the date that you give the letter to the licensee. A form letter that you can use is included at the end of these questions and answers. You may use that letter, use a form letter the licensee has provided to you, or write your own letter.
10. To declare my pregnancy, do I have to have documented medical proof that I am pregnant?
- NRC regulations do not require that you provide medical proof of your pregnancy. However, NRC regulations do not preclude the licensee from requesting medical documentation of your pregnancy, especially if a change in your duties is necessary in order to comply with the 0.5 rem (5 mSv) dose limit.
11. Can I tell the licensee orally rather than in writing that I am pregnant?
- No. The regulations require that the declaration must be in writing.
12. If I have not declared my pregnancy in writing, but the licensee suspects that I am pregnant, do the lower dose limits apply?
- No. The lower dose limits for pregnant women apply only if you have declared your pregnancy in writing. The United States Supreme Court has ruled (in *United Automobile Workers International Union v. Johnson Controls, Inc.*, 1991) that "Decisions about the welfare of future children must be left to the parents who conceive, bear, support, and raise them rather than to the employers who hire those parents" (Reference 7). The Supreme Court also ruled that your employer may not restrict you from a specific job "because of concerns about the next generation." Thus, the lower limits apply only if you choose to declare your pregnancy in writing.
13. If I am planning to become pregnant but am not yet pregnant and I inform the licensee of that in writing, do the lower dose limits apply?

- No. The requirement for lower limits applies only if you declare in writing that you are already pregnant.
14. What if I have a miscarriage or find out that I am not pregnant?
If you have declared your pregnancy in writing, you should promptly inform the licensee in writing that you are no longer pregnant. However, if you have not formally declared your pregnancy in writing, you need not inform the licensee of your nonpregnant status.
15. How long is the lower dose limit in effect?
The dose to the embryo/fetus must be limited until you withdraw your declaration in writing or you inform the licensee in writing that you are no longer pregnant. If the declaration is not withdrawn, the written declaration may be considered expired one year after submission.
16. If I have declared my pregnancy in writing, can I revoke my declaration of pregnancy even if I am still pregnant?
Yes, you may. The choice is entirely yours. If you revoke your declaration of pregnancy, the lower dose limit for the embryo/fetus no longer applies.
17. What if I work under contract at a licensed facility?
The regulations state that you should formally declare your pregnancy to the licensee in writing. The licensee has the responsibility to limit the dose to the embryo/fetus.
18. Where can I get additional information?
The references to this Appendix contain helpful information, especially Reference 3, NRC's Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Radiation Exposure," for general information on radiation risks. The licensee should be able to give this document to you.

For information on legal aspects, see Reference 7, "The Rock and the Hard Place: Employer Liability to Fertile or Pregnant Employees and Their Unborn Children--What Can the Employer Do?" which is an article in the journal *Radiation Protection Management*.

You may telephone the NRC Headquarters at (301) 415-7000. Legal questions should be directed to the Office of the General Counsel, and technical questions should be directed to the Division of Industrial and Medical Nuclear Safety.

You may also telephone the NRC Regional Offices at the following numbers: Region I, (610) 337-5000; Region II, (404) 562-4400; Region III, (630) 829-9500; and Region IV, (817) 860-8100. Legal questions should be directed to the Regional Counsel, and technical questions should be directed to the Division of Nuclear Materials Safety.

REFERENCES FOR APPENDIX

1. National Council on Radiation Protection and Measurements, *Limitation of Exposure to Ionizing Radiation*, NCRP Report No. 116, Bethesda, MD, 1993.
2. International Commission on Radiological Protection, *1990 Recommendations of the International Commission on Radiological Protection*, ICRP Publication 60, Ann. ICRP 21: No. 1-3, Pergamon Press, Oxford, UK, 1991.
3. USNRC, "Instruction Concerning Risks from Occupational Radiation Exposure," Regulatory Guide 8.29, Revision 1, February 1996.⁽¹⁾ (Electronically available at <http://www.nrc.gov/reading-rm/doc-collections/reg-guides/>)
4. Committee on the Biological Effects of Ionizing Radiations, National Research Council, *Health Effects of Exposure to Low Levels of Ionizing Radiation (BEIR V)*, National Academy Press, Washington, DC, 1990.
5. United Nations Scientific Committee on the Effects of Atomic Radiation, *Sources and Effects of Ionizing Radiation*, United Nations, New York, 1993.
6. R. Doll and R. Wakeford, "Risk of Childhood Cancer from Fetal Irradiation," *The British Journal of Radiology*, 70, 130-139, 1997.
7. David Wiedis, Donald E. Jose, and Timm O. Phoebe, "The Rock and the Hard Place: Employer Liability to Fertile or Pregnant Employees and Their Unborn Children--What Can the Employer Do?" *Radiation Protection Management*, 11, 41-49, January/February 1994.
8. National Council on Radiation Protection and Measurements, *Considerations Regarding the Unintended Radiation Exposure of the Embryo, Fetus, or Nursing Child*, NCRP Commentary No. 9, Bethesda, MD, 1994.
9. National Council on Radiation Protection and Measurements, *Risk Estimates for Radiation Protection*, NCRP Report No. 115, Bethesda, MD, 1993.
10. National Radiological Protection Board, *Advice on Exposure to Ionising Radiation During Pregnancy*, National Radiological Protection Board, Chilton, Didcot, UK, 1998.
11. M.L. Thomas and D. Hagemeyer, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities, 1996," Twenty-Ninth Annual Report, NUREG-0713, Vol. 18, USNRC, 1998.⁽²⁾

REGULATORY ANALYSIS

A separate regulatory analysis was not prepared for this regulatory guide. A regulatory analysis prepared for 10 CFR Part 20, "Standards for Protection Against Radiation" (56 FR 23360), provides the regulatory basis for this guide and examines the costs and benefits of the rule as implemented by the guide. A copy of the "Regulatory Analysis for the Revision of 10 CFR Part 20" (PNL-6712, November 1988) is available for inspection and copying for a fee at the NRC Public Document Room, 2120 L Street NW, Washington, DC, as an enclosure to Part 20 (56 FR 23360).

1. Single copies of regulatory guides, both active and draft, and draft NUREG documents may be obtained free of charge by writing the Reproduction and Distribution Services Section, OCIO, USNRC, Washington, DC 20555-0001, or by fax to (301)415-2289, or by email to (DISTRIBUTION@NRC.GOV). Active guides may also be purchased from the National Technical Information Service on a standing order basis. Details on this service may be obtained by writing NTIS, 5285 Port Royal Road, Springfield, VA 22161. Copies of active and draft guides are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L Street NW., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202)634-3273; fax (202)634-3343.

2. Copies are available at current rates from the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20402-9328 (telephone (202)512-1800); or from the National Technical Information Service by writing NTIS at 5285 Port Royal Road, Springfield, VA 22161. Copies are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L Street NW., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202)634-3273; fax (202)634-3343.

RADIOGRAPHY DIDACTIC AND CLINICAL COMPETENCY REQUIREMENTS

Eligibility Requirements Effective January 2012*

Candidates for certification are required to meet the Professional Requirements specified in Article II of the *ARRT Rules and Regulations*. This document identifies the minimum didactic and clinical competency requirements for certification referenced in the *Rules and Regulations*. Candidates who complete a formal educational program accredited by a mechanism acceptable to the ARRT will have obtained education and experience beyond the requirements specified here.

Didactic Requirements

Candidates must successfully complete coursework addressing the topics listed in the *ARRT Content Specifications for the Examination in Radiography*. These topics are presented in a format suitable for instructional planning in the *ASRT Radiography Curriculum (2007)*.

Clinical Requirements

As part of their educational program, candidates must demonstrate competence in the clinical activities identified in this document. Demonstration of clinical competence means that the program director or designee has observed the candidate performing the procedure, and that the candidate performed the procedure independently, consistently, and effectively. Candidates must demonstrate competence in the areas listed below.

- Six mandatory general patient care activities.
- Thirty-one mandatory imaging procedures.
- Fifteen elective imaging procedures to be selected from a list of 35 procedures.
- One elective imaging procedure from the head section.
- Two elective imaging procedures from the fluoroscopy studies section, one of which must be either an Upper GI or a Barium Enema.

Documentation

The following pages identify specific clinical competency requirements. Candidates may wish to use these pages, or their equivalent, to record completion of the requirements. The pages do NOT need to be sent to the ARRT.

To document that the didactic and clinical requirements have been satisfied, candidates must have the program director (and authorized faculty member if required) sign the ENDORSEMENT SECTION of the **Application for Certification** included in the *Certification Handbook*.

***Excerpt taken from the ARRT website: <https://www.arrt.org/Handbooks>

ASRT Code of Ethics

American Society of Radiologic Technologists

- The radiologic technologist conducts himself or herself in a professional manner, responds to patient needs and supports colleagues and associates in providing quality patient care.
- The radiologic technologist acts to advance the principal objective of the profession to provide services to humanity with full respect for the dignity of mankind.
- The radiologic technologist delivers patient care and service unrestricted by concerns of personal attributes or the nature of the disease or illness, and without discrimination on the basis of sex, race, creed, religion or socio-economic status.
- The radiologic technologist practices technology founded upon theoretical knowledge and concepts uses equipment and accessories consistent with the purpose for which they were designed and employs procedures and techniques appropriately.
- The radiologic technologist assesses situations; exercises care, discretion and judgment; assumes responsibility for professional decisions; and acts in the best interest of the patient.
- The radiologic technologist acts as an agent through observation and communication to obtain pertinent information for the physician to aid in the diagnosis and treatment of the patient and recognizes that interpretation and diagnosis are outside the scope of practice for the profession.
- The radiologic technologist uses equipment and accessories, employs techniques and procedures, performs services in accordance with an accepted standard of practice and demonstrates expertise in minimizing radiation exposure to the patient, self and other members of the health care team.
- The radiologic technologist practices ethical conduct appropriate to the profession and protects the patient's right to quality radiologic technology care.
- The radiologic technologist respects confidences entrusted in the course of professional practice respects the patient's right to privacy and reveals confidential information only as required by law or to protect the welfare of the individual or the community.
- The radiologic technologist continually strives to improve knowledge and skills by participating in continuing education and professional activities, sharing knowledge with colleagues and investigating new aspects of professional practice.

***Excerpt taken from the American Society of Radiologic Technologists at www.asrt.org