Jackson College Radiography Program

Mission Statement

The Jackson College Radiography Program will strive to provide individuals with a quality education in radiography based in ethical practice and technical understanding. These efforts will help to fulfill the college’s mission of providing a qualified workforce to the community.

The Goals of the Program

1. Graduates will be competent entry-level radiographers.
   Student Learning Outcomes:
   - Students will demonstrate competent positioning skills.
   - Students will demonstrate appropriate patient care.
   - Students will utilize radiation protection.

2. Students will demonstrate the ability to problem solve and critically think.
   Student Learning Outcomes:
   - Students will demonstrate knowledge of complex radiologic theory.
   - Students will adapt knowledge to non-routine situations.

3. Students will demonstrate appropriate communication skills.
   Student Learning Outcomes:
   - Students will demonstrate effective communication skills with patients.
   - Students will demonstrate effective communication skills with clinical staff.

4. The program will provide students with professional growth and development.
   Student Learning Outcomes:
   - Students will demonstrate professional growth at the clinical site.
   - Students will demonstrate further research into the profession.

The Jackson College Radiography Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The JRCERT can be contacted at www.jrcert.org. Program effectiveness data about the program can be found at the JRCERT website. If a student has a question or concern about accreditation or accreditation standards, please contact the program director or the JRCERT.
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What is a Radiology Technologist?

A Radiology Technologist is a highly skilled health professional whom administers medical x-rays in order to help diagnose illness. A Radiographer operates various types of x-ray/imaging machines depending upon their level of training.

The field of radiography includes general medical imaging, fluoroscopy, trauma imaging, surgical imaging, and other specialized procedures. Radiographers can also further their education and go on to learn C.T.(Computed Tomography), MRI (Magnetic Resonance Imaging), and Mammography. There are many avenues of growth in radiography.

A Radiographer’s prime job is to aid the Radiologist in getting the information that he/she needs in order to adequately diagnose a patient’s condition. In order to do this, the Radiographer must have good knowledge of anatomy and physiology. A technologist must perform the radiographic examination and ensure that high quality images have been obtained.

The Radiography program is an integrated two-year classroom instruction and clinical training program leading to an Associate Degree in Applied Science. It is designed to prepare the student for employment in the field of Diagnostic Radiography.

Joseph E. Shackelford, M.A., R.T.(R), ARRT
Director, Radiography Program
Jackson College
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Jackson, MI 49201
Admission Requirements and Process for the Radiographer Program

1. Students must have completed the following courses with a minimum final grade of at least a 3.0 prior to admission.

- MOA 120 – Medical Terminology
- DMS 100 – Introduction to Diagnostic Imaging
- HOC 130 – Introduction to Health Occupations
- BIO 132 – Human Biology

2. All applicants’ academic records are evaluated. Grades / GPA outcomes from, BIO 155, MOA 120, DMS 100, HOC 130, and health related courses are components for evaluation by using a numerical point system.

3. All qualified applicants will have a consultation (interview) with the Jackson College Radiographer Program Admissions Committee.

   A. The admissions committee will be comprised of a minimum of three of the following individuals:
      1. Radiographer Program Director
      2. Radiographer Program Instructors
      3. Radiographer Program Clinical Instructors
      4. Clinical Education Center Radiology Managers
      5. Allied Health Director

   B. All applicants will be asked to respond to the same set of questions during the consultation (interview) session.

   C. All applicants will be evaluated by each admission committee member and an average score is entered into an overall point tally for admission considerations.

4. Only those individuals with the highest total combined scores of the academic evaluation and the consultation (interview) session will be accepted.

5. Admissions process is nondiscriminatory in regards to race, color, religion, national origin, ancestry, age, sex, marital status, or handicap.

6. All Radiology students accepted in the program will be required to submit a completed statement of health/physical condition. The completed physical statement needs to include: medical history, physical exam results, and immunizations. This statement must be received by the Allied Health office prior to any Radiology student beginning their clinical education.

7. Radiology students accepted into the program must submit proof of Hepatitis B vaccination or signed waiver, Tuberculin Test or negative chest X-ray, CPR Certification.

8. All accepted students are required to complete a background check and drug screening that costs approximately $180.00. These tests are mandatory and completed during the first semester of the program prior to clinical placement.

Radiography
Associate in Applied Science

A radiographer is the allied health professional who uses ionizing radiation to image patients in hospitals and various health care clinical settings. Other functions of the radiographer is to assist the radiology physician (radiologist) in the administration of contrast material to patients in order to enhance the visibility of certain anatomical structures on a radiograph. It is designed to prepare the student for employment in the field of diagnostic radiography.
Jackson College is accredited by the North Central Association of Colleges and Secondary Schools. The radiography program (RAD) is a two-year program leading to an associate in applied science degree. The curriculum consists of integrated didactic and clinical course work in approved clinical education affiliate.

The program is designed to prepare the student for employment in the field of diagnostic radiography; positions are located within hospitals, medical clinics, and other diagnostic imaging institutions. Upon successful completion, students are eligible to write the American Registry of Radiologic Technologists (ARRT) exams. Satisfactory completion of the ARRT board certifying exams allows the radiographer to use the initials of R.T.(R) [Registered Technologist (Radiography)].

Applicants must successfully complete DMS 100, BIO 132, HOC 130 and MOA 120 with a grade outcome of 3.0 or higher before they can be considered for the Radiography Program.

*Applications must be received by the Allied Health Office no later than January 31st.
*RAD Admission Committee confers first week of March.
*Applicants are notified by mail no later than the second week in April for a spring/summer semester start.

<table>
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<tr>
<th>Minimum credits</th>
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<tr>
<td>Minimum cumulative GPA</td>
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<tr>
<td>Minimum grade in DMS 100; HOC 130; MOA 120; BIO 155</td>
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<tr>
<td>Minimum Jackson College credits</td>
<td>12</td>
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<td>MACRAO agreement</td>
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**Radiography Program**

Students should refer to the Jackson College’s course catalog to review the most current course outcomes to for a degree in applied science in Radiography. This can be found on Jackson College’s webpage at http://www.jccmi.edu/studentservices/catalog/index.htm

**General Education Requirements** (General Education Outcomes – GEO)

**GEO 1 – Write clearly, concisely, and intelligibly (3 credits)**

ENG 131 Writing Experience

**GEO 2 – Speak clearly, concisely, and intelligibly (3 credits)**

Choose One:

- COM 231 Communication Fundamentals
- COM 240 Interpersonal Communications

**GEO 3 – Demonstrate computational skills and mathematical reasoning (4 credits)**

MTH 131 Intermediate Algebra

**GEO 4 – Demonstrate scientific reasoning (4-8 credits)**

Choose from the following:

- BIO 132 – Human Biology
- BIO 155 – Anatomy and Physiology
- BIO 253/254 – Human Anatomy and Physiology I & II

**GEO 5 – Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3 credits)**

PSY 140 Introduction to Psychology
**GEO 6 – Understand aesthetic experience and artistic creativity (3 credits)**

_HUM 131 – Cultural connections_

**GEO 7 – Understand and respect the diversity and interdependence of the world’s peoples and cultures (3 credits)**

_HOC 130_

**Essential Competencies (EC) – Achieved by successful completion of a program pathway of study.**

**EC 1 – Think critically and act responsibly**

**EC2 – Work productively with others, recognizing individual contributions to group success**

**EC3 – Exhibit technological literacy**

**Radiography Related Requirements (9 Credits)**

- **HOC 130** Introduction to Health Occupations 3 Credits
- **DMS 100** Intro to Diagnostic Medical Imaging 3 Credits
- **MOA 120** Medical Terminology 3 Credits

**RAD Core (52 credits) (2.0 required for each course)**

- **RAD 120** Radiographic Orientation 2 Credits
- **RAD 121** Radiographic Positioning I 4 Credits
- **RAD 125** Radiographic Positioning II 4 Credits
- **RAD 126** Clinical Practicum I 3 Credits
- **RAD 162** Clinical Practicum II 3 Credits
- **RAD 209** Cross-Sectional Imaging 3 Credits
- **RAD 211** Clinical Practicum III 6 Credits
- **RAD 214** Clinical Practicum IV 5 Credits
- **RAD 219** Clinical Practicum V 5 Credits
- **RAD 160** Fundamentals of Radiologic Science 4 Credits
- **RAD 161** Radiographic Exposure 4 Credits
- **RAD 213** Radiobiology 2 Credits
- **RAD 212** Special Radiographic Studies 4 Credits
- **RAD 218** Radiographic Pathology 3 Credits
Radiography Program – Suggested course schedule for an Associate Degree in Applied Science

Prerequisite Semester:

Winter:
BIO 155 – Human Anatomy and Physiology – 5 credits
HOC 130 – Introduction to Health Occupations – 3 credits
DMS 100 – Introduction to Diagnostic Imaging – 3 credits
MOA 120 – Medical Terminology – 3 credits

First Year

Spring:
RAD 120 Radiologic Orientation – 2 credits
RAD 121 Radiographic Positioning I (Class/Lab) – 4 credits
COM 231 Communication Fundamentals – 3 credits

Fall:
RAD 125 – Radiographic Positioning II (Class/Lab) – 4 credits
RAD 126 – Clinical Practicum I – 3 credits
ENG 131 – Writing Experience – 3 credits
MTH 131 – Intermediate Algebra – 3-4 credits (Or higher level math course)

Winter:
RAD 160 – Fundamentals of Radiologic Science – 4 credits
RAD 161 – Radiographic Exposure (Class/Lab) – 4 credits
RAD 162 – Clinical Practicum II – 3 credits

Second Year

Spring:
RAD 209 – Cross-Sectional Imaging – 3 credits
RAD 211 – Clinical Practicum III – 6 credits

Fall:
RAD 214 – Clinical Practicum IV – 5 credits
RAD 213 – Radiobiology – 2 credits
RAD 212 – Special Radiographic Studies – 4 credits
Humanities Class – 3 credits

Winter:
RAD 219 – Clinical Practicum V – 5 credits
RAD 218 – Radiographic Pathology – 3 credits
PSY 140 – Introduction to Psychology – 4 credits

All Radiographer courses must be completed with a minimum GPA of 2.0 to be considered passing. All Radiographer clinical practicum courses are subject to special scheduling dates which may not follow the traditional college semester calendar.

Radiography Coursework

Course descriptions may be found in Jackson College’s catalog http://www.jccmi.edu/studentservices/catalog/index.htm

RAD 120 Radiographic Orientation
- This course introduces the student to radiography by covering patient care issues, radiology history, imaging equipment, exams in radiography, ethics and professionalism, medicolegal issues, radiation safety, and professional organizations of radiography.
RAD 121 Radiographic Positioning I
- This course teaches the student anatomy and basic positioning of the upper and lower extremities, chest, and abdomen in preparation for entering the clinical setting. The course includes a lab, during which, students practice and demonstrate the ability to position anatomy correctly.

RAD Clinical Practicum
- During the clinical aspect of the student’s education, the student will observe and learn from ARRT registered technologists. Students will perform solo exams as they become comfortable, eventually earning a “clearance” upon demonstrating competency in certain examinations. Rotations are developed for student experience in the areas of the radiography department including 2nd shift rotations.
- First year students are typically in the hospital two days a week, while second year students are typically in the hospital setting three days a week.

RAD 125 Radiographic Positioning II
- This course continues the students learning of radiographic positioning. Anatomy and positioning of the spine, head, GI tract, and urinary system are covered. A lab is included for demonstration of learning.

RAD 160 Fundamentals of Radiologic Science
- This course covers the science of radiography including everything from how x-rays are created to x-ray circuitry. The importance of electricity and magnetism in understanding radiographic principles is also covered. Basic atomic structure is studied and important in understanding how x-rays are created and how x-ray photons interact with the human body. Lab is included.

RAD 161 Radiographic Exposure
- This course teaches the fundamentals of radiographic exposure. Density, contrast, distortion, and recorded detail in imaging are covered. All of the factors that work together in attaining a high quality x-ray are researched. The equipment that is used in diagnostic imaging is also studied. Lab is included.

RAD 209 Cross-Sectional Imaging
- The cross-sectional imaging course introduces students to viewing and understanding cross-sectional anatomy. This is important in viewing CT and MRI images. The course is an online course that provides many learning exercises to aid in understanding the material.

RAD 213 Radiobiology
- This course studies the effects of ionizing radiation on human tissue. Cellular biology and the affects of radiation at the cellular level are covered. Principles of radiation safety are included.

RAD 212 Special Radiographic Studies
- This course covers the specialized exams of radiographic imaging. These studies include medicolegal considerations, contrast media, arthrography, ERCP, hysterosalpingography, lymphography, myelography, sialography, venography, mammography, CT, MRI, and equipment necessary in specialized procedures.

RAD 218 Radiographic Pathology
- This course covers the differing types of pathologic conditions that occur within the differing systems of the body. Pathology terms are studied and made familiar to students. Also, pathologic effects on technique selection are discussed.

Clinical Attendance (Students are required to attend orientation at their primary hospital)
Dependability and punctuality are fundamental factors in the Radiology clinical component. Any absences or tardiness, no matter how legitimate, disrupts the learning process of the student and disrupts the workings of the Radiology Department.

Students will be allowed to call in two clinical days each semester without any loss of semester grade. After that, a doctor’s slip is required for any further days missed. Failure to provide a doctor's slip will result in being placed on academic probation. The next occurrence will result in dismissal from the radiography program. There will be
a loss of 2% of the final grade for each day missed after 2 days regardless of reason. All missed days must be made up.

Tardiness is also unacceptable. Three (3) tardies will be equivalent to one absent day. Excessive tardiness will result in removal from the radiography program.

Continual absences and/or tardiness will result in dismissal from the radiography program.

Meetings and Seminars
Students are encouraged to attend the Annual MSRT meeting and the Annual Registry Review meeting. Students will be given one hour of clinical time for each one hour of attendance of these meetings. Students are required to complete a meeting report along with a brochure of the meeting(s). Should students choose to attend other Meetings or Seminars; no clinical hours of credit will be considered.
Clinical Performance & Competency

Clinical Performance: The student will be expected to function in the clinical site in an observational role in the beginning. He/She will participate by assisting the Radiologic Technologist where requested. Students are required to perform all procedures under the direct supervision of a qualified radiographer until they achieve competency.

As the student gains experience and confidence, he/she will move to a more active role by helping the Radiologic Technologist with exams. The student’s rate of progress will depend upon his/her ability to perform and comprehend the tasks that have been assigned to him/her.

The student will move into a more independent performance role as he/she gains experience, but only after he/she has successfully completed their competencies. The student will always perform exams under the direct supervision of the Radiologic Technologist.

When the student has performed the procedure(s) satisfactorily, he/she can be evaluated on that examination for competency. The student will be evaluated by a Clinical Instructor or qualified radiographer. Once they achieve competency, they must perform procedures under the indirect supervision of a qualified radiographer. This means that the technologist must be “immediately available”. This means that the technologist must be within communication distance of the student.

Students are expected to assume responsibility for their own learning by preparing for clinical instruction just as they are expected to do for the classroom. Additionally, students are expected to keep busy with appropriate tasks in the clinical site, to review previously learned tasks and material as needed. Students will demonstrate and practice good body mechanics, as instructed in the radiography program course, throughout their clinical site portion of the program.

Student will demonstrate and put into practice proper verbal and written communication skills throughout the clinical site portion of the program.

Student will learn correct interpretations of requisitions.

Student will learn appropriate patient positioning including: AP, Prone, Lateral Decubitus, Upright, Trendelenberg, and Oblique positions.

Note: It is expected that a student’s high learning curve days at the clinical site will be on those days when the clinical site has a lower case load. Low learning curve days are when the clinical site is very busy with a heavy case load. On busy days, the student is expected to be of as much help to the staff as is possible. However, students are placed in clinical site as a learning modality and we wish to use this clinical experience to the fullest extent possible. Students must understand and adhere to the policies the clinical site requires prior to working in that particular clinical site (this may include a urinalysis and/or a drug screening).

Student Competency Evaluation: Students will be evaluated throughout the entire program to determine mastery in all course work required to graduate from the Radiography Program with an Associate Degree in Applied Sciences.

Student’s clinical progress will be evaluated according to the course goals, performance objectives, and procedure performance. This is a continual process throughout each clinical semester. During the spring semester of the second year, each student will receive a terminal competency evaluation to demonstrate competency as an entry-level Technologist.
Radiation Monitoring and Safety Policy
The radiography program will provide radiation monitoring to all students while they are at clinical sites. The program director will maintain records of student exposure. Students are entitled to view their exposure records at any time. The student may make a request to the Program Director to view these exposures. Exposure levels fall into one of two categories:

1. Category “A” exposures – Less than 60 mrem.quarter
2. Category “B” exposures – Greater than 60 mrem quarter

Anyone receiving a category “B” exposure will be contacted by the program director about utilizing proper radiation protection methods.

Students will be advised and trained in proper radiation protection procedures throughout their courses in the radiography program. Students are advised not to hold patients or image receptors during imaging procedures. Non-radiation workers should be utilized when a person is needed to hold a patient during a procedure. Students must protect patients and themselves during imaging procedures. Always shield patients when appropriate, and always utilize proper shielding during exposure to the live x-ray beam. Students must wear proper radiation badges during their scheduled clinical rotations. Students must also wear radiation monitoring badges when exposures are made in the energized lab at the college if they are in the lab during the exposure. Students are never to be exposed to the direct x-ray beam when in the energized lab at the college. **Exposures are only allowed to be made at the college lab under the direct supervision of an instructor that is a registered radiographer.**

Radiographer Program General Policies

**Section 1**
Students are required to notify the appropriate supervisor at their clinical site of their absences for each occurrence. The notification of absence intent should be at least 30 minutes prior to the students’ scheduled starting time. All missed clinical time must be made up within the semester that it was lost. Sufficient time has been allowed during each semester to complete the required clinical hours. Make-up hours will be scheduled at a time that is convenient for the clinical coordinator.

**Section 2**
Two absences that are not reported to the proper supervisor will result in disciplinary action.

**Section 3**
Students are required to be at their clinical site until the completion of an eight-hour shift, unless permission is granted from the clinical coordinator. Students will only receive clinical hours for time actually spent within the clinical setting.

**Section 4**
Tardiness will be counted against the total clinical hours. If it appears that arrival time will be late, notify the clinical instructor whenever possible. Excessive tardiness will result in disciplinary action.

**Section 5**
Any student who is unable to perform the routine duties of a Radiography student because of personal illness or injury must notify the clinical coordinator as soon as possible. The student must also notify the clinical coordinator as soon as possible in writing of the anticipated length of the illness or disability.

**Section 6**
If a student fails a course or leaves the Radiography Program for any reason, their position in the program is forfeited.
Section 7
The student is to notify the attending Radiographer whenever they, the student, leave the assigned work area. Failure to do so may be interpreted as abandonment of the clinical assignment.

Section 8
Cellular phones are not to be on a student’s physical person while performing clinical rotations. Cellular phones may be kept in an assigned locker during clinical hours. Students may have their phones when on a break or at lunch. Students may have a cellular phone in their pocket if there is an urgent family reason that is preapproved by the clinical instructor. In such a situation, the phone must be in vibrate mode and not brought out in the presence of a patient at any time.
Section 9 - Pregnancy

The development of radiation exposure standards reflects the sensitivity of cells to radiation damage. This radiation sensitivity is related to the reproductive activity of the cells: embryos and fetuses are more radiosensitive than children and adults. Because of the sensitivity of the unborn fetus, the National Council on Radiation Protection (NCRP), (Report Number 105, p. 13, 1989), has recommended that the dose equivalent limit to the unborn fetus from occupational radiation exposure of the expectant mother be limited to 500 millirem for the entire pregnancy.

If you are or become pregnant while you are participating in this program it is your option to inform program officials or not. If you elect to notify us of your pregnancy we will work with you to limit the potential risk to your unborn fetus. If you wish to voluntarily declare your pregnancy, you must do so in writing to the program director. The program director will provide education and training to you throughout your pregnancy.

It is your responsibility to decide whether the exposure you may receive is sufficiently low to protect your child. The advice of the radiation safety officer and Program Coordinator may be obtained to determine whether the radiation levels are high enough that the unborn child could receive 500 millirem or more before birth. The alternatives you might want to consider if you are now pregnant or expect to become pregnant include the following:

1. You may continue in your current status as student radiographer without modification or interruption understanding that the radiation exposure to the fetus must be limited to 500 millirem during the 9 month gestation period. This option is only recommend if prior badge readings indicate that less than 500 millirem should be accumulated over the 9 month period. You should reduce your exposure as much as possible by decreasing the amount of time you spend in the clinical radiation areas, increasing your distance from the radiation source, and using proper shielding.

2. You could decide not to continue assignments or modify assignments in the areas where radiation is present. This could affect your graduation date. Should you choose this option, ask the Program Coordinator or Clinical Coordinator to reassign you to areas involving less exposure to radiation. Didactic and clinical schedules shall be modified to enable you to continue in the program while minimizing exposure to ionizing radiation.

3. If the above options are not possible, you might consider taking a leave of absence until the child is born which, again, could affect your graduation date or depending on where you are in the program it could result in you being unable to complete the program. You may have to re-apply for admission to the program so you should discuss this with the program coordinator before you make your decision.

Whatever alternative you select, you should do so without delay. The unborn fetus is more sensitive to radiation during the first three (3) months of your pregnancy. You have the right to withdraw, in writing, any declaration of pregnancy at any time.

I have read and understand the above information and have received a copy of the NRC guide #8.13 (Exhibit B). I further understand the potential health risks to my unborn child should I become pregnant and choose to remain in the program.

Social Security Number ___________________ Estimated Delivery Date, If applicable ___________________ Signature ___________________ Date ___________________

The following student has received a copy of the NRC guide # 8.13 as indicated by her signature and date of receipt.

Print – Jackson College Representative’s Name ___________________ Signature ___________________ Date ___________________
Section 10
Students are **NOT** allowed to repeat a radiograph without the **direct supervision** of a technologist. **Students who perform repeat radiographs without a technologist present will be removed from the radiography program.** This rule serves to protect patients.

Section 11
Students are not allowed to perform an exam unless they have a clearance (competency) achieved in that particular examination. Students must perform only exams that are within their ability to perform and have obtained a clearance (competency). No exams can be performed that have not been covered in class. Students who have obtained competency must perform exams under the indirect supervision of a registered technologist. This means that the technologist must be within communication distance of the student (**the technologist must be “immediately available”**). **Students who perform exams outside of their scope of training will be removed from the radiography program.** This rule serves to protect patients. Students are not allowed to observe mammography or HSG procedures.

Section 12
The Jackson College Radiography Program will place students who are accepted into the program at an assigned clinical site. While in the program students will be rotated between no less than two (2) recognized clinical sites for their radiography education. **If the student is asked to leave that clinical site by the clinical instructor for any reason, Jackson College is not responsible for finding another clinical site for that student. The result will be that the student is dismissed from the radiography program.**

Section 13
The Jackson College radiography program is designed to comply with standards of the **Joint Review Committee on Education in Radiologic Technology.** If a student believes that there is any non-compliance with these standards, the student should inform the Program Director. If the student is not satisfied with the actions of the program director, it is recommended that the student then contact the JRCERT. Contact information can be found at [JRCERT.org](http://JRCERT.org). JRCERT standards can be viewed upon request of the Program Director who maintains a copy of the standards. The program maintains a record of such complaints and their resolutions.

Injuries
If you are injured during your clinical experience you must report the injury to your radiographer, clinical instructor, or a supervisor. You will be provided with minor emergency medical treatment to the same extent as that provided to employees, as stated in the human resources policy manual. According to our agreement with each clinical site, you will be responsible for any costs incurred beyond this minor emergency medical treatment.

Medical Insurance
Students are **not** provided with any form of medical insurance by the College or the clinical site. **Such insurance must be arranged on your own. It is highly recommended that students have their own medical insurance.**

Liability Insurance
The college carries malpractice liability insurance for registered full-time students who are completing their clinical education at their assigned clinical site.

Health Certification Form
Prior to beginning your studies at the assigned clinical site, each student must have their Health Certificate Form (Exhibit A) completed by their physician and submitted to the Allied Health Office. This form will be kept at the College. It is strongly suggested that you retain a copy for your own records in case you would need emergency treatment while at your assigned clinical site.

**Dress Code**

The students’ dress is a reflection of themselves as well as Jackson College and the clinical site affiliation. The appearance of the student will reflect good personal hygiene and professional dress during all of their clinical practicum.

*Section 1:* The Jackson College Radiographer student uniform will consist of the following:

a. Matching smock top and pants (Color to be agreed upon by the students of that program year)

b. Good solid leather shoes

--No denim pants are to be worn at a clinical site during scheduled clinical practicum. If you are not dressed appropriately, you may be asked to leave.

*Section 2:* The students’ mode of dress must adhere to the proper safety regulations and requirements of the clinical affiliate. If you have pierced ears, wear only one set of small, plain posts. Any body piercing jewelry must be removed. Any significant tattoos must be covered while you are at the clinical site. Perfume or cologne should be avoided at the clinical site.

*Section 3:* All Radiology students will be required to purchase a name badge. The name badge must contain the students’ name, the college’s name, and indicate that they are a Student Radiographer. Name badges can be purchased at a uniform store.

*Section 4:* The dress code is required by all students regardless of their assigned clinical site placement.

**Employment**

Students are encouraged not to work during the Radiographer program. Due to limited clinical site affiliations and scheduled days within the Radiology Departments, students will be required to follow a rigid schedule during their clinical site portion of the program. Therefore, if a student chooses to continue to work while in the program, the clinical site schedule will not be altered or adjusted in any way to conform to the students’ personal work schedule.

*Section 1:* Students are not allowed to accept payment for any part of their clinical site component.

*Section 2:* Jackson College Radiographer Program students are strongly discouraged from accepting employment as a non-registered Radiographer. Students do not become eligible for the A.R.R.T. examination until they complete all aspects of the program. Students who accept such employment may be putting themselves at risk of a lawsuit. Students who do accept employment as a Radiographer do so at their own risk. Jackson College, the Radiography Program Coordinator, or any faculty, are not responsible for any student working as an employed Radiographer before completing the program. Hours spent working as a paid Radiographer, will not be credited as clinical time.

**Grade Point (GP)**

All Radiography students are required to maintain a 2.0 grade point in each course in the Radiography Program.

*Section 1:* Any Radiography student who does not maintain a 2.0 grade point in each Radiography course will be removed from the Radiography Program.

*Section 2:* Grades will only be changed for incomplete grades or faculty/clerical error.
Section 3: Radiography students must maintain a 2.0 GPA while they are in the program, and must maintain this overall GPA to receive the Associate of Applied Arts and Science Degree. A student will be dismissed from the program if a required course in the program is unsatisfactorily completed.

Section 4: The Program Coordinator will provide direction to students who need help improving their study habits or test taking skills. Jackson College provides a center for student success to help students with such needs.

Section 5: Course grading will follow the guidelines established in the college catalog with the grading scale as listed below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>95 – 100</td>
</tr>
<tr>
<td>3.5</td>
<td>90 – 94</td>
</tr>
<tr>
<td>3.0</td>
<td>85 - 89</td>
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<tr>
<td>2.5</td>
<td>80 – 84</td>
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<td>75 – 79</td>
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<td>1.5</td>
<td>70 - 74</td>
</tr>
<tr>
<td>1.0</td>
<td>65 – 69</td>
</tr>
<tr>
<td>0.5</td>
<td>60 – 64</td>
</tr>
<tr>
<td>0.0</td>
<td>59 - below</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
</tr>
</tbody>
</table>

Availability of ARRT Requirements

The Program Coordinator will provide students with a copy of the American Registry of Radiologic Technologists requirements of the Radiography Program educationally. The Program Coordinator will help students to understand precisely what is required of them as they work toward successful completion of the Radiography Program.

Cheating

Cheating is defined as (this may not be an all-inclusive list):
1. Copying another person's answers.
2. Giving answers on tests to others.
3. Bringing answers to a test situation.
4. Plagiarism including copying another student's papers, etc.
5. Forging competency evaluation forms.
6. Forging or misrepresenting clinical hours.

Any student found cheating in any Radiography course will receive a failing grade in that course and immediate expulsion from the radiography program.

Holidays

Section 1: Students will not be required to perform clinical rotations on the following holidays. If students wish to make up clinical time on the stated holidays listed below, it must be approved by the clinical instructor to ensure proper student supervision.

- New Years Day
- Labor Day
- Memorial Day
- Thanksgiving Day
- July 4th
- Christmas Day

Section 2: Radiography students will follow the normal college calendar for vacation times. Students will receive a Spring break and Christmas break. Other times can be identified in the college catalog at http://www.jccmi.edu/studentservices/catalog/index.htm

Student Conduct

Radiography students are expected and required to conduct themselves in a professional manner at all times of the Radiography Program.

Section 1: The Radiography students must acknowledge the importance of the protection of confidential information concerning patients and their families. Any and all information (official and unofficial) regarding a patient or his/her family is considered to be confidential and privilege information. Any Radiography
student violating a patient’s right to confidentiality will be dismissed permanently from the Radiography Program upon proof of such violation.

Section 2: Radiography students are required to follow all reasonable rules and regulations of each clinical site they are assigned.

Section 3: All Radiography students are to park their cars in a designated area of a particular clinical site’s choice.

Section 4: Substance Abuse. Undisputable proof of substance abuse of either drugs or alcohol during a student’s clinical component of their training will be cause for permanent dismissal from the Jackson College Radiography Program upon the discretion of the Radiography Program Coordinator. If there is reason to believe that a student is under the influence of drugs and/or alcohol, they will be required to undergo drug and/or alcohol testing. If a student refuses to submit to a test or the student’s test returns a positive result, the student will be immediately removed from the program.

Section 5: Students are required to act in a professional manner towards all instructors in the radiography program. Students are also expected to act professionally towards employees at the clinical site. Repeated unprofessional actions towards the above mentioned individuals will result in dismissal from the radiography program.

Section 6: Student(s) asked to leave a clinical site as a result of unprofessional behavior will be removed from the program.

Drug Free Campus Policy

Students should refer to the Jackson College’s course catalog to review the Drug Free Campus Policy. This can be found on Jackson College’s webpage at http://www.jccmi.edu/studentlife/handbook

Communicable Disease Policy

Objective: To protect health care personnel from transmission by considering all patients as potentially infected with HIV and/or other blood-borne pathogens, and to adhere rigorously to infection control precautions for minimizing the risk of exposure to blood, body fluids, and moist body substances of all patients.

1. All health-care workers should routinely use appropriate barrier precautions to prevent skin and mucous-membrane exposure when contact with blood or other body fluids of any patient is anticipated. Gloves should be worn for touching blood and body fluids, mucous membranes, or non-intact skin of all patients, and for handling items or surfaces soiled with blood or body fluids. Gloves should also be worn during venipuncture or other vascular access procedures. Gloves should be changed after contact with each patient. Masks and protective eyewear or face shields should be worn during procedures that are likely to generate droplets of blood or other body fluids to prevent exposure of mucous membranes of the mouth, nose, and eyes. Gowns or aprons should be worn during procedures that are likely to generate splashes of blood or their body fluids.

2. Hands and other skin surfaces should be washed immediately and thoroughly if contaminated with blood or other body fluids. Hands should be washed immediately after gloves are removed.

3. All health-care workers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal of used needles; and when handling sharp instruments after procedures. Refer to the policy and procedure manual of each clinical site for the specific methods for disposing of the objects mentioned above.
4. Although saliva has not been implicated in HIV transmission, to minimize the need for mouth-to-mouth resuscitation, mouthpieces, resuscitation bags, or other ventilation devices should be available for use in areas in which the need for resuscitation is predictable.

5. Health-care workers who have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling patient-care equipment until the condition resolves.

6. Pregnant health-care workers are not known to be at greater risk of contracting HIV infection than health-care workers who are not pregnant; however, if a health-care worker develops HIV infections during pregnancy, the infant is at risk of infection resulting from pre-natal transmission. Because of this risk, pregnant health-care workers should be especially familiar with and strictly adhere to precautions to minimize the risk of HIV transmission.

7. Body substances such as feces, airway secretions, and wound drainage, and urine always may contain potentially infectious organisms. The universal precaution system not only protects health-care workers from transmission of blood-borne pathogens, but also from other infectious agents found in moist body substances. Patients are protected from organisms present on the hands of personnel, and the staff’s hands are protected from acquiring new organisms.

**Student Conduct/Warning Notice Procedure**

Radiography students are expected and required to conduct themselves in a professional manner at all times.

A student will receive a **verbal warning notice** as the first step of the probation process for unsatisfactory performance. A **written warning notice** is the second step of the probation process. These notices will be issued soon after the problem is identified. Progressive violations will warrant immediate removal from the program. Failure to improve behavior following a written warning will result in removal from the program.

**The criteria for receiving a warning notice include** (note – those marked may not be an all-inclusive list):

1. Unsatisfactory achievement of clinical objectives.
2. *Unsafe clinical practice. It is understood that unsafe clinical practice may include either a combination of several or repetitive examples of the following:
   a. Errors in recording of pertinent clinical data.
   b. Failure of safely adopting basic patient care skills to actual patient care situations resulting in actual or potential patient harm. This is relative to the degree of completion of the Radiography curriculum.
   c. Failure to demonstrate sound judgment relative to the student’s degree of Radiography curriculum completion.
   d. Unsafe or inappropriate diagnostic service to the patient.
   e. Failure to follow universal precautions or blood-borne pathogens processes.
3. *Failure to establish effective working relationships with clinical site team members in providing patient services.
4. *Failure to establish effective relationships with patients.
6. *Students are prohibited from being under the influence of alcohol or an illegal drug while at a clinical site, in class, or participating in other aspects of the program. If there is reason to believe that a student is under the influence of drugs and/or alcohol, they will be required to undergo drug and/or alcohol testing. If the student refuses to submit to a test or the student’s test returns a positive result, the student will be immediately removed from the program.
7. *Failure to assume the responsibilities of a student in the Radiography Program:
   a. Excessive tardiness.
   b. Inappropriate personal appearance or inappropriate clinical behavior.
   c. Unethical behavior, i.e., lying, cheating, stealing, etc.
d. Repeated failure to submit required written work in the clinical area or repeated lateness in submitting work.
8. Failure to meet the “Clinical Site Guidelines and Competency Levels of the Jackson College Radiography Program.
9. *Failure to submit clinical documents such as, evaluation forms, time sheets, log sheets.
10. *Failure to comply with Jackson College’s Student Code of Conduct or Student Rights and Responsibilities Handbook.
11. *Failure to comply with HIPAA laws.
12. *Failure to comply with program policies.

*Serious violations will warrant immediate removable from the program without a verbal or written warning issued (note – those marked may not be an all-inclusive list).

Student’s reply to the warning notice

The student is expected to reply to the warning notice within three days, using the student corrective action reply form. The student’s reply must show evidence of problem solving regarding the identified unsatisfactory behaviors. This will include the following:

a. The students’ perception of the problem.
b. Awareness of the seriousness of the warning notice.
c. Methods that will be utilized to correct the problem.

Resolution of the warning notice

At the end of the established warning probationary period, the student and instructor will again have a conference to discuss the effectiveness of the student’s corrective action. If the student has progressed to another clinical area/class during this time, the present instructor and the instructor who issued the warning notice will evaluate him/her.

1. If the student shows satisfactory improvement, the warning notice will be resolved. A written evaluation of the student’s progress will be submitted, signed, and dated, by both the instructor(s) and the student. This will remain on file until the student graduates. Copies will be given to the Director of the Allied Health, Chairperson of Allied Health, Program Coordinator, the instructor, and the student.
2. If the behavior that originally elicited the warning notice reoccurs, the student will automatically fail the clinical portion of the course, and thus fail the course.
3. If the student does not show satisfactory improvement after receiving a warning notice, the student will be removed from the program.

Changes in clinical schedule due to a warning notice

When issued a warning notice, students:
1. Will not progress to any clinical area where the identified problems cannot be evaluated.
2. Will have their schedule arranged, if possible, by the instructor, in consultation with Program Director, Clinical Coordinator, and Clinical Instructor, to prevent loss of academic time.

Appeal Process

Students who have a grievance, or wish to appeal a grade are urged to contact the office of the student ombudsman for assistance with this process. The ombudsman will be able to provide guidance with the student complaint process to ensure that students take the appropriate steps. The webpage for the student ombudsman is jccmi.edu/ombudsman/. This page contains contact information, the student complaint process, as well as the necessary forms for students to use when working through the student complaint process.

Application for National Registry Exams
Students’ will be advised and aided in preparing applications for the ARRT board exams. Jackson College will supply each student with a registry application and all necessary letters of documentation. It is the students’ responsibility to complete the application and send it to the registry office.
Re-Consideration to the Radiography Program

The student seeking to return to a radiography program will send a letter requesting re-consideration to the Director of Allied Health. Students are allowed ONE re-consideration to this program. The request for re-consideration letter will include:

1. The student’s perception of the problem leading to dismissal and explanation of contributing circumstances;
2. Demonstration of an understanding and awareness of the problem;
3. What the student has done to rectify the problem;
4. The student’s detailed plan for success in the radiography course to be repeated and future radiography courses if re-admitted.

The request will be forwarded to the Allied Health Department Re-Consideration Committee. The Committee will be composed of two allied health faculty other than the faculty directly involved in the dismissal, one faculty member from another discipline, the Student Ombudsman, the Allied Health Department Chair, and the Director of Allied Health. The Allied Health Department Re-Consideration Committee will meet as needed.

The student and faculty member involved in the dismissal will be informed by the Director of Allied Health of the time, date and place of the meeting. At the meeting, the student will present a detailed academic success plan. The faculty member involved in the dismissal will present an overview of the behaviors that led to the dismissal and his/her support for or against re-consideration. In absence of the involved faculty, the lead faculty of the course will present. The student has the choice of being present or not during the involved faculty’s presentation. The student and involved faculty will then be excused from the meeting.

The Allied Health Department Re-Consideration Committee, after reviewing the student’s history, the documents described above, and faculty recommendation will determine if the student will be re-admitted to the radiography program. The Allied Health Department Re-Consideration will look for compelling evidence that the reasons for the dismissal can be corrected with certain changes, and that these particular changes improve the chances for a successful outcome. If the student is permitted to return to the program, the Allied Health Re-Consideration Committee along with the Program Director will determine if additional courses must be repeated, and will detail what other requirements (i.e. skills validation) are associated with the opportunity to repeat the failed course.

The Director of Allied Health will notify the student in writing of the final determination and any re-consideration conditions. Any re-consideration is based on space availability.

If the student is denied re-consideration and wishes to appeal the Allied Health Department Re-Consideration Committee decision, the student will submit a letter requesting a review to the College Re-Consideration Committee. The decision of the College Re-Consideration Committee is final.

The student will not be allowed to continue in the program until this process is complete and a determination on readmission is made.

A student who wants to be considered for re-consideration will need to have their written request received by the Allied Health Office by the following deadlines:

Radiography January 31st for re-consideration for the next May start of a program

Personal Problem Solving

If any Radiography student is having difficulties maintaining the program course work, personal conflicts, or have complaints regarding the program, please see the Program Coordinator for assistance.

Financial problems should be discussed with the Jackson College Financial Aid Department.
Clinical Education Disclaimer

Student Capacity:
1. Maximum student enrollment shall not exceed the capacity determined according to the volume and variety of radiologic procedures, equipment, and personnel available for educational purposes.
2. There shall be one first year student admitted per staff radiographer certified by the ARRT, or possessing suitable equivalent qualifications. There shall be no less than one registered technologist for each student assigned to the clinical site.
3. There shall be one clinical coordinator for each 10 students. Student capacity is also determined by the clinical education site and its’ ability to provide an adequate clinical experience.

Clinical Site Availability: While Jackson College uses its best efforts to negotiate clinical sites, even after they become available they can become unavailable for reasons beyond the control of Jackson College and in that event Jackson College has no liability. No one at Jackson College has authority to modify the conditions and information outlined in this handbook other than in writing signed by the Director of Allied Health.

Federal Law Concerning Chemical Hazards

Federal law requires that all individuals must be notified about hazardous chemicals present in the work place. This law applies to all occupations, with the basic purpose of raising the level of consciousness on chemical safety. There are safe levels and proper procedures or precautions to be followed when handling any chemical, just as there are when working with x-ray.

Chemical suppliers are required to prepare Material Safety Data Sheets (MSDS) for all chemicals in radiology. The MSDS should be accessible for your review. The clinical instructor will provide students with information specific to their department.

X-ray and Photographic Processing

Photographic chemicals may be used in a hospital for processing x-ray film. Some of these chemicals must be used with more than routine precaution.

Photographic developers must be in alkaline solution for full activity. Sometimes a two-solution formulation is used in which a small stock of concentrated alkali is added to a large volume of developer to obtain a working solution. In a similar way, some fixers require the addition of concentrated acid to a fixed solution. These concentrated chemicals require extra care in handling since they have the potential to cause tissue damage more rapidly than the diluted working solutions. Concentrated acetic acid is not only a strong and corrosive acid, but also produces a highly corrosive vapor that is extremely flammable. Even the more dilute working solutions should be handled with care since prolonged or repeated contact can lead to skin irritation, cracking, and blistering. Virtually, all photographic chemicals, especially developers, can cause an allergic reaction that is characterized by itching and red scaly skin. The use of gloves, tongs, or barrier creams can help to minimize skin contact hazards. In most modern radiology departments, the chemicals are well contained and there is limited chance of chemical contact when changing the chemical containers. It is always recommended that goggles as well as gloves be worn when changing chemicals.

Most photographic chemicals give off irritating vapors that can affect the nose and eyes. Work areas should be well ventilated to reduce this hazard. Some automated x-ray processing equipment store large volumes of solutions in plastic reservoirs. Vapors can build up in these containers and may be released when the cap is opened.

Confidentiality of Student Records Policy for Clinical Facilities

All student records must be kept locked at all times. Student files must be kept in a locked file cabinet, or behind a locked door. There must be no possibility of unauthorized access to student files at any time. Violations should be reported to the program director.
Students should refer to the Jackson College’s course catalog to review the Family Educational Rights and Privacy Act (FERPA). This can be found on Jackson College’s webpage at http://www.jccmi.edu/legalaffairs/FERPA.htm

Clinical Site Familiarization

Students are required to become familiar with the location of the following areas within their assigned clinical site:

a. Office of the Director of Radiology
b. Office of the Chief Radiographer (if applicable)
c. Radiologists office(s)
d. Reading room(s)
e. General x-ray room(s)
f. Fluoroscopy area/IVP area
g. C.T. room
h. Nuclear Medicine
i. Mammography suite(s)
j. Ultrasound
k. Special Procedure area (if applicable)
l. Processor areas
m. Secretarial areas
n. Transcription area
o. File room
p. In-patient room areas/ICU/CCU
q. Surgery Department
r. Location of C-arm machine(s)
s. Location of Portable x-ray machine(s)
t. Cafeteria

Clinical coordinators will help the students to become familiar with their clinical site at the beginning of their clinical assignments. Students should strive to become familiar with the people as well as the environment of their clinical site.

Primary Clinical Education Course Goals

1. The student will develop an understanding of the internal layout and operations of the clinical facility, including, patient care areas, diagnostic and therapeutic facilities, and general staff and maintenance areas.
2. The student will establish a working knowledge of the department of X-ray/Imaging including its’ staff, procedures, schedule, and patients.
3. The student will correctly position patients into specific radiographic positions as required by their department of X-ray/Imaging, Jackson College, and official radiographic positioning references.
4. The student will observe, identify, manipulate, describe, and explain general and specific radiographic equipment under normal and normally abnormal conditions.
5. The student will identify, witness, utilize, describe, and explain medical terminology as it relates to actual patient conditions, preparations, and procedures.
6. The student will witness, observe, communicate, interact, manipulate, and generally work with patients in all stages of health, disease, injury, and abnormality.
7. The student will interact, observe, communicate, and relate to health occupational workers and institutions in the treatment, diagnosis, and care of patients.
8. Each student will adhere to the clinical schedule and report to the X-ray department at the assigned time.
9. The X-ray/Imaging department is to be notified if the student is unable to attend the clinical for any reason and each individual occurrence. Notification should occur at least one-half hour prior to the students’ scheduled starting time.
10. All absent clinical time must be made up during the same semester that it is missed.
11. Uniforms worn at the clinical site must comply with the Jackson College Radiography Program uniform code.
12. Students will rotate throughout the various areas of the X-ray/Imaging department.
13. The student will be responsible for all radiographic positioning that the student has demonstrated competency in during the college positioning laboratory practicum.
14. If there is an exam that the student has not been adequately trained to perform in the college positioning lab, the student should assist the Radiographer in assisting and examining the patient.
15. The student should use the following criteria as a guide to the clinical education experience.
   a. Properly identify each patient to be examined.
   b. Properly position the patient for the requested exam(s).
   c. Select the proper technical factors in accordance with the requested examinations and level of training.
   d. Properly utilize radiographic markers on the radiograph.
   e. Properly mark each radiograph with patient identification according to the facilities system.
   f. Use proper methods of radiation protection for patient, self, and others.
   g. Accurately identify anatomy contained on specified radiographs.
   h. Efficiently organize work habits.
   i. Effectively work with others within the affiliate.
   j. Communicate professionally with others within the clinical affiliate.

**Off-Shift Rotation Policy**

Off-shift is defined as any time in which routine studies are not scheduled and staffing is reduced. The following are usually considered to be off shifts:

- Second shift – 3 p.m. – 11 p.m.
- Third shift - 11p.m. – 7 a.m. – *Students are not allowed to perform clinical education during these hours.*
- Saturdays
- Sundays
- Holidays

Off shift rotations must meet the goals of the program in terms of being beneficial to the student. Off shift rotations must meet the following standards:

1. There must be a 1:1 technologist to student ratio.
2. Technologists must always be available for the student.
3. Students must be allowed to perform examinations and evaluate the image outcomes.
4. There must be adequate volume of procedures to ensure a useful learning experience for students.

Students will be asked to evaluate the value of off shift rotations each semester.

Off shift experiences can be invaluable to students. Employers often look for people with off-shift experience. Students are required to perform off-shift rotations. The clinical coordinator of the clinical site must schedule off shift rotations. In order to attend an off-shift rotation a student must have demonstrated lab competency in upper/lower extremities, chest, and abdomen. *Students are required to complete off-shifts as scheduled by the clinical site and clinical coordinator.* The value of the clinical education during off-shift rotations will be evaluated via the off-shift evaluation form annually to ensure quality experiences for students. A student’s total off-shift hours for the duration of the radiography program may not exceed more than 25% of the total program hours, per the JRCERT policy. The Program Director and clinical coordinator will monitor hours to ensure that off-shift hours do not total more than 25% of a student’s total program hours while in the program.

Off shift rotations must meet the following requirements:

1. The rotation must provide quality learning experiences to the student.
2. There must be no less than a 1:1 student to technologist ratio.
3. Technologists must be available to answer questions and critique student work.
4. There must be a variety of examinations that take place.
5. Students must be allowed to perform/practice exams in an effort to obtain competency.
6. Students will learn the differences between the day shift and off shifts.

Clinical Hours

The total approximate clinical hours to be completed in the Radiography Program are as follows:

First Year
Fall 15 wks x 2 days per week = 240 hours/3 credits
Winter 15 wks x 2 days per week = 240 hours/3 credits

Second Year
Spring/Summer 12 weeks x 5 days per week = 472 hours (minus July 4th)/6 credits
Fall 15 wks x 3 days per week = 360 hours/5 credits
Winter 15 wks x 3 days per week = 360 hours/5 credits

Total approximate hours = 1,672 clinical hours/22 credit hours

First year students attend clinicals 2 days a week or 16 hours per week, while second year students attend clinicals 3 days a week or 24 hours per week. The summer semester that begins the second year requires that students attend clinicals for 5 days a week or 40 hours per week for 10 weeks. Students are not allowed to attend clinicals for more than 40 hours per week or 10 hours per day. Any violations of this policy must be reported to the program director.

Students that need to schedule make up hours must do so with the clinical instructor, and have those hours approved by the clinical instructor.

If the college closes due to inclement weather, students are not required to attend clinical, and those hours will not be counted against the total clinical hours required.

Clinical Course Evaluation

Clinical grades are based upon the following three items:
1. Students will receive at least two evaluations based on the performance standards administered by the clinical coordinator. The clinical coordinator also uses rotational evaluations that are completed by technologists to assist in evaluating the student’s clinical site progress. The rotational evaluations from the technologists are for learning purposes and are not used as part of the student’s grade.
2. Students must achieve the minimum clinical hours for that semester. Days that are missed must be made up during that semester, or an incomplete will be given.
3. A minimum number of clinical competency clearances must be completed during each semester.

A summary of the course evaluation system is as follows:
- Evaluations = 70% of grade
- Clinical Hours = 20% of grade
- Clinical competency clearances = 10% of grade
Total = 100%
Professionalism: Affective Domain Standards of Performance

As you participate in your Radiography education, you will be expected to demonstrate that you have indeed learned what is required to become a Professional Radiographer. There are three main component areas into which your learning may be categorized: Cognitive, Psychomotor, and Affective.

When most people think of “schooling”, they usually refer to the first two of these areas, Cognitive and Psychomotor. You learn your facts and theories and then you put them into practice, actually performing tasks, skills, etc. All too often, the development of what the profession considers to be the appropriate attitudes, beliefs, and feelings toward what your learning, what your doing, and how you are doing them, are assumed to automatically occur. A truly balanced education requires that all three component areas must be attended to. In view of this, an important component part of your being aware of how well you are progressing in your learning will be the inclusion of affective measurement tools within the clinical evaluation process. The evaluations will measure your progress as a technical Technologist, and grade your mastery of the affective behavior that is important in being a high quality Radiographer. Affective elements that will be assessed include: Accountability, Adaptability, Assertiveness, Compassion, Dependability, Effective Communication, Empathy, Honesty, Integrity, Leadership, Respect for others, and Teamwork.

Graduation & Commencement

An application for graduation needs to be filed for each degree. Students should refer to the college’s Graduation & Commencement process located on Jackson College’s webpage at http://www.jccmi.edu/StudentServices/Registration/graduation.htm
Dear Student:

The Health Certification Form (Exhibit A) must be completed by the physician of your choice for the sole purpose of determining and documenting your physical status prior to the clinical component of your Allied Health Program.

This statement in no way is utilized for admission, retention, or removal from any Allied Health Program.

This medical statement must be completed and returned to the Allied Health Department by May 18th.

I strongly suggest that you retain a copy for your own records.

Sincerely,

Joseph E. Shackelford, M.A., R.T.(R)
Director, Radiography Program
JACKSON COLLEGE
Clinical Competency/Clearance Grade Sheet

Name____________________________________ Date___/___/___

Exam

- Rate performance on a pass/fail basis.

<table>
<thead>
<tr>
<th>Procedure Performance</th>
<th>Performance Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Requisition properly used to identify the patient and exam.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>2. Properly prepared the imaging room for the exam.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>3. Patient was properly cared for and assisted.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>4. Equipment operation/Technique selection was adequate.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>*Technique selection is suitable for student’s level of training.</td>
<td></td>
</tr>
<tr>
<td>5. Proper positioning was utilized.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>6. Proper central ray position.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>7. Used proper IR size.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>8. Images were identified accurately.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>9. Demonstrates knowledge of anatomy.</td>
<td>Pass / Fail</td>
</tr>
<tr>
<td>10. Evidence of radiation protection.</td>
<td>Pass / Fail</td>
</tr>
</tbody>
</table>

- Student must pass 8 out of 10 to demonstrate competency.
- Bold items must be passed in order to pass the competency.

Procedures completed for competency must be stated before the exam begins. The student will be allowed minimal independent review prior to beginning the procedure, but no coaching by staff technologists or other students will be allowed before or during the procedure.

Student’s score = _______________ Scorer’s signature__________________________

Comments:____________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Revised 5/13
Jackson College Radiography Program  
Student Rotational Evaluation Form

Student Name ________________________________  Date ___/___/___  
Room/Area ________________________________  Clinical Site __________________

Your evaluation of this student’s performance is valued as part of their education. Please circle your choices and sign this form after completion. Any comments you might have will be greatly appreciated.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrates effective patient relationships.</td>
<td>3</td>
</tr>
<tr>
<td>2. Works well with technologists and staff.</td>
<td>3</td>
</tr>
<tr>
<td>3. Shows desire to learn.</td>
<td>3</td>
</tr>
<tr>
<td>4. Demonstrates the ability to follow directions.</td>
<td>3</td>
</tr>
<tr>
<td>5. Accurately sets technical factors appropriately for the student’s level of education.</td>
<td>3</td>
</tr>
<tr>
<td>6. Effectively manipulates equipment.</td>
<td>3</td>
</tr>
<tr>
<td>7. Demonstrates good positioning skills for student’s level of education.</td>
<td>3</td>
</tr>
<tr>
<td>8. Reacts appropriately to constructive criticism.</td>
<td>3</td>
</tr>
<tr>
<td>9. Is professional in appearance.</td>
<td>3</td>
</tr>
<tr>
<td>10. Behaves in an ethical manner in the clinical setting.</td>
<td>3</td>
</tr>
<tr>
<td>11. Demonstrates appropriate radiation safety measures.</td>
<td>3</td>
</tr>
</tbody>
</table>

Scorer’s Signature ____________________________  Student’s Signature ____________________________

C.I. Signature ____________________________  Used for Mid or Final Evaluation(Circle One)

Comments

1. What is this student doing well?

2. What does this student need to work on?

Updated 11/15
# Jackson College Radiography Program
## Student Mid/Final Evaluation Form

**Student Name** ____________________________________________  **Semester** ________________________

---

**Scale** = 3 – Excellent  2 – Good  1 – Needs improvement

---

<table>
<thead>
<tr>
<th>Affective Skills</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrates good relationships with technologists and staff.</td>
<td>_____</td>
</tr>
<tr>
<td>2. Demonstrates good patient relationships.</td>
<td>______</td>
</tr>
<tr>
<td>3. Communicates effectively with patients.</td>
<td>_____</td>
</tr>
<tr>
<td>4. Communicates effectively with supervising technologists.</td>
<td>_____</td>
</tr>
<tr>
<td>5. Is consistently in appropriately assigned area.</td>
<td>_____</td>
</tr>
<tr>
<td>6. Appropriately reacts to constructive criticism.</td>
<td>_____</td>
</tr>
<tr>
<td>7. Demonstrates care and concern for patients.</td>
<td>_____</td>
</tr>
<tr>
<td>8. Demonstrates a strong desire to learn.</td>
<td>_____</td>
</tr>
<tr>
<td>9. Arrives to scheduled location on time.</td>
<td>_____</td>
</tr>
<tr>
<td>10. Demonstrates the ability to follow directions.</td>
<td>_____</td>
</tr>
<tr>
<td>11. Demonstrates ethical behavior in the clinical setting</td>
<td>_____</td>
</tr>
<tr>
<td>12. Uses appropriate language at the clinical site.</td>
<td>_____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Psychomotor Skills</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrates good positioning skills(appropriate to level of education).</td>
<td>_____</td>
</tr>
<tr>
<td>2. Demonstrates ability to set accurate technical factors appropriate to the students level of education.</td>
<td>_____</td>
</tr>
<tr>
<td>3. Demonstrates a high quality of work.</td>
<td>_____</td>
</tr>
<tr>
<td>4. Effectively manipulates equipment.</td>
<td>_____</td>
</tr>
<tr>
<td>5. Demonstrates knowledge of anatomy.</td>
<td>_____</td>
</tr>
<tr>
<td>6. Accurately critiques images.</td>
<td>_____</td>
</tr>
<tr>
<td>7. Cares for room and equipment.</td>
<td>_____</td>
</tr>
<tr>
<td>8. Demonstrates appropriate radiation safety measures with patients and self.</td>
<td>_____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professionalism (2 = Yes, 1 = No)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is professional in appearance.</td>
<td>_____</td>
</tr>
<tr>
<td>2. Arrives to the clinical site on time.</td>
<td>_____</td>
</tr>
<tr>
<td>3. Is making adequate progress.</td>
<td>_____</td>
</tr>
<tr>
<td>4. Maintains master clearance sheet accuracy.</td>
<td>_____</td>
</tr>
<tr>
<td>5. Maintains patient privacy.</td>
<td>_____</td>
</tr>
<tr>
<td>6. Turns in evaluations on time. (Mid – Sem. = 6 / Final Sem. = 13 total)</td>
<td>_____</td>
</tr>
</tbody>
</table>

**Total** - _____

**Comments:**

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

**Clinical Instructor** ____________________________________________  **Date** ___/___/___

**Student Signature** ____________________________________________  **Date** ___/___/___

Updated 10/15
Jackson College – Radiography Program
Final Clinical Grade Sheet

RAD________ Semester_____________Year___________ Date___/___/___

Student Name___________________________________________

1. **Student Evaluation Score**
   - Two evaluations worth 60 points each
   - Students are responsible for turning in evaluations
     * Failure to turn in evaluations will drop the student’s overall grade by one letter grade.
     Points = __________________

2. **Clinical Hours** (30 points)
   - Students will be allowed to call in two clinical days each semester without any loss of grade. The missed hours must be made up.
   - After two absences a doctor’s slip is required when missing clinicals. Failure to present a doctor’s notice will place the student on academic probation.
   - There will be a loss of 2% for each day missed after 2 days.
   Points = __________________

3. **Clinical Competency Clearances** (20 points) Achieved-_______=____________
   - Based on students achieving appropriate number of clearances.
   - 1st year = Fall – 5 , Winter – 10
   - 2nd year = Spring/Summer – 11, Fall – 10, Winter – 10
   - Students are allowed to attain more than the listed number of clearances during a semester.

4. **Total Score** (Total possible = 170)
   Points = __________/_______%

Clinical Instructor Signature___________________________Date___/___/___
Program Director Signature______________________________Date___/___/___

**Grade Scale**
- 4.0 = 95-100%
- 3.5 = 90-94%
- 3.0 = 85-89%
- 2.5 = 80-84%
- 2.0 = 75-79%

Updated 11/15
Jackson College Radiography Program Delineation of Duties

1. **Program Director** – Responsible for administration of the program. Directs the activities of the program and ensures that the program is operational. This includes hiring appropriate instructors for courses. The program director helps to guide curriculum advancement and resource management for the program. The program director works to ensure that all program policies adhere to JRCERT requirements.

2. **Clinical Coordinator** – The C.C. is responsible for assigning clinical assignments to all students, and responding to the needs of clinical instructors and students. These duties include being familiar with the program’s clinical evaluation process, and directing clinical instructors in the administration of these procedures. The C.C. is also responsible for communicating with the program director about the status of clinical sites and students at the clinical sites. The C.C. also ensures that all practices at clinical sites adhere to JRCERT requirements.

3. **Clinical Instructors** – The C.I. is responsible for overseeing students at the clinical site. This involves helping to create a quality learning environment at the clinical site. The C.I. is also responsible for ultimate evaluation of the student at the clinical site. C.I.’s must collect evaluations and competencies which are to be used in formulating the student’s clinical grade. They must also work directly with the clinical coordinator and the program director to ensure that program needs and student needs are met.

4. **Instructors** – All radiography instructors/professors report to the program director. They are responsible for meeting with and working with the program director in regards to course delivery and course improvement. These individuals have no less than 5 years of experience in the profession.
Jackson College
Departments of Allied Health & Nursing
HEALTH CERTIFICATION FORM

Jackson College’s Departments of Allied Health & Nursing require that each student furnish the following documentation:

1. A Statement of Physical/Emotional Fitness
2. Current BLS for Health Provider CPR certification from The American Heart Association
3. Verification of Immunization Status

The completed Health Certificate Form and copies of the required records must be provided before the student may begin clinical course studies. In nursing courses, failure to have up-to-date documentation will result in a 3% deduction to the student’s final course grade. In allied health courses, failure to have up-to-date documentation will result in the student NOT being able to begin his/her clinical studies.

The form and required documentation needs to be returned to the admissions office of your designated health program.

A. Identification

<table>
<thead>
<tr>
<th>Student’s Name:</th>
<th>Student ID Number:</th>
</tr>
</thead>
</table>

B. Statement of Physical/Emotional Fitness (MUST BE COMPLETED BY A PHYSICIAN, PHYSICIAN ASSISTANT, OR NURSE PRACTITIONER). Please review the attached technical standards and functions for ______________________ (insert program of study).

<table>
<thead>
<tr>
<th>I have reviewed the attached technical standards and functions for this student’s program of study and in my judgment this student is physically and emotionally capable of participating in the Jackson College Health Occupation program indicated above.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature of physician, physician assistant, or nurse practitioner</td>
</tr>
<tr>
<td>Type or print name of physician, physician assistant, or nurse practitioner</td>
</tr>
<tr>
<td>Address</td>
</tr>
<tr>
<td>Telephone Number (including area code)</td>
</tr>
</tbody>
</table>

Any student with a condition that could impact decision making or the physical ability to provide client/patient care must discuss his/her condition with the program director for his/her program of study.

Immunization Requirements

According to the Center for Disease Control (CDC), all healthcare personnel (HCP) must show evidence of immunity to measles, mumps, rubella and varicella. In addition, due to the potential exposure to blood or bodily fluids and risks related to direct patient contact, the CDC recommends that HCP protect themselves with vaccinations against Hepatitis B and Tetanus/Diphtheria/Pertussis and be screened for Tuberculosis. Jackson College students must provide documentation of compliance with the CDC Healthcare Personnel Recommendations. Documentation of immunity must be a copy of an official immunization record or copies
of lab reports indicating positive titers (self reporting or parent’s record of disease or vaccinations is not acceptable). See the back of this for a listing of immunization requirements.

All Required Documentation Must Accompany This Form
CPR & TB Must Remain Current Throughout The Duration of the Program

C. CPR Certification and Immunization Checklist:

1. CPR Certification (BLS for Health Care Provider via The American Heart Association)
   - Submit copy of both the front and back of card
     
     Allied Health Dept. will only accept BLS for Health Care Provider

D. Required Immunizations:
Submit Copies Of An Official Immunization Record Or Lab Reports For The Following Immunizations. Keep Originals For You Own File

1. Rubella (German Measles)
   - Documentation of 2 doses of MMR 4 weeks apart OR a positive Rubella titer
2. Rubeola (Hard Measles)
   - Documentation of 2 doses of MMR 4 weeks apart OR a positive Rubeola titer
3. Parotitis (Mumps)
   - Documentation of 2 doses of MMR 4 weeks apart OR a positive Mumps titer
4. Varicella (Chicken Pox)
   - Documentation of 2 doses of Varicella given 28 days apart OR a positive Varicella titer
5. Diphtheria/Tetanus/Pertussis (TD or Tdap)
   - Documentation of a booster within the past 10 years. If booster is needed recommend a Tdap
6. Hepatitis B
   - Documentation of 3 dose Hepatitis B series at 0-1-6 month interval OR a positive Hep B surface antibody titer

E. Two Step Tuberculin Skin Test (TST):
Submit The Following

1. Documentation of first negative TST
2. Documentation of second negative TST, within 14 days from the first negative TST
3. If first TST is positive you need documentation from your health care provider of evaluation and treatment OR
4. If you have a previously positive TST you must submit a copy of a chest x-ray, no older than 2 years, and documentation from your health care provider that there is no active pulmonary disease.
5. The date of the second test becomes the anniversary date for your annual TST.

F. Seasonal Flu Shot
Submit Dates and Lot Numbers For The Following:

1. Documentation of 2015-2016 Flu Vaccine no later than November 1, 2015

NOTE: It is the student’s responsibility to keep their health record updated and evidence submitted to the Allied Health Office prior to the expiration date. Failure to do may result in the inability to participate in the program.

By signing below I give my permission for Jackson College to release any and all information contained in this record to any clinical facility that I am assigned to. I also understand that I am responsible for the accuracy of the information I have provided and that I am required to notify Jackson College if there is a change in my health that could potentially impact my ability to participate in my program of study. I further acknowledge that failure to provide accurate and complete health records and/or failure to notify Jackson College of a change in my health that
could potentially impact my ability to participate in my program of study could result in me being dismissed from my program of study.

Student Signature _____________________________________________
Date___________________

Exhibit A

TECHNICAL STANDARDS FOR ADMISSION
ALLIED HEALTH DEPARTMENT
JACKSON COLLEGE

The Allied Health Department faculty has specified the following non-academic criteria which applicants generally are expected to meet in order to participate in the Department of Allied Health Sciences programs and professional practice. These technical standards are necessary and essential and have been developed to provide for the health and safety of the patients receiving care from the Allied Health Department program students.

OBSERVATION – The applicant must be able to participate in all demonstrations, laboratory exercises and clinical practicum in the clinical component and to assess and comprehend the condition of all patients assigned for examination, diagnosis and treatment.

COMMUNICATION – The applicant must be able to communicate with patients to effectively elicit patient compliance, understand and assess non-verbal communications; and be able to effectively transmit information to patients, physicians, paraprofessionals, faculty and staff in a timely way.

PSYCHOMOTOR – The applicant must have motor functions sufficient to elicit information from patients by appropriate diagnostic or therapeutic maneuvers; be able to perform basic tasks; possess all necessary skills to carry out diagnostic or therapeutic procedures; be able to interpret movements reasonably required to provide general care and emergent treatment/actions as necessary for patient safety and comfort.

INTELLECTUAL / CONCEPTUAL INTEGRATIVE AND QUANTITATIVE ABILITIES – The applicant must be able to measure, calculate, reason, analyze, evaluate, and synthesize information and observations. Problem solving, the critical skill demanded of Allied Health Practitioners, requires all of these cognitive abilities. In addition, the applicant must be able to comprehend three-dimensional structures and understand the spatial relationships of these structures.

BEHAVIOR AND SOCIAL ATTRIBUTES – The applicant must possess the emotional health required for full utilization of intellectual abilities; execute appropriate medical judgment; the prompt completion of assigned or non-assigned responsibilities for care of and service to the patient; and the development of supportive and effective relationships with patients. Applicants must be able to tolerate physical and mental work loads, function effectively under stress, adapt to changing environments and conditions, display flexibility and function in the face of uncertainties inherent in the clinical setting and with patients. Compassion, integrity, concern for others, interest and motivation are personal qualities with each applicant should possess.
Beginning with the fall semester, Radiography students start their first clinical rotation. It is important for you to be made aware of the technical tasks and function requirements associated with the profession of Medical Radiography. In each of the following tasks listed below, put a check mark by the tasks which you feel you are able to perform.

### Standards and Functions

<table>
<thead>
<tr>
<th>Standards</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Sufficient motor skills and coordination to move and adjust equipment</td>
<td>Reach overhead in order to move the Radiographic tube-head. Rotate the</td>
</tr>
<tr>
<td>suspended from the ceiling at a height of up to six feet.</td>
<td>tube-head and manipulate the locks.</td>
</tr>
<tr>
<td>2) Speech sufficient to be understood by others; ability to understand</td>
<td>Explain radiographic procedures and preparations to patients. Ability to</td>
</tr>
<tr>
<td>the communication of others.</td>
<td>instruct patients during the course of an examination.</td>
</tr>
<tr>
<td>3) Ability that is sufficient to understand and follow verbal and written</td>
<td>Receive reports and instructions for radiographic procedures from</td>
</tr>
<tr>
<td>directions and information.</td>
<td>Radiologist and other physicians.</td>
</tr>
<tr>
<td>4) Sufficient muscle strength, lower back and knee stability, to handle</td>
<td>Lift and carry grid cassettes, positioning devices, lead aprons, and</td>
</tr>
<tr>
<td>and carry equipment up to 20 pounds a distance of 20 feet.</td>
<td>other shielding devices needed in performing a radiographic procedure.</td>
</tr>
<tr>
<td>5) Sufficient muscle strength, lower back and knee stability to handle</td>
<td>Assist in placing patients on and off of wheelchairs, stretchers, and</td>
</tr>
<tr>
<td>patients in a safe manner.</td>
<td>gurneys. Transport patients from their hospital room to the radiology</td>
</tr>
<tr>
<td>Sufficient physical coordination to move patients on gurneys, stretchers,</td>
<td>department and back.</td>
</tr>
<tr>
<td>and wheelchairs.</td>
<td></td>
</tr>
<tr>
<td>6) Sufficient muscle strength, lower back and knee stability to handle</td>
<td>Move patients from a stretcher or wheelchair onto an exam table and from</td>
</tr>
<tr>
<td>patients in a safe manner.</td>
<td>the exam table back to the stretcher or wheelchair. Move patients into</td>
</tr>
<tr>
<td></td>
<td>various positions while on the exam table. Such motion requires leaning</td>
</tr>
<tr>
<td></td>
<td>across a cart and reaching to the exam table while assisting to lift the</td>
</tr>
<tr>
<td></td>
<td>patient as well as pulling and pushing on the patient.</td>
</tr>
<tr>
<td>7) Sufficient muscle strength and physical coordination to move and guide</td>
<td>Move non-motorized and motorized mobile x-ray and fluoroscopy machines</td>
</tr>
<tr>
<td>the motion of</td>
<td>to and from</td>
</tr>
<tr>
<td>heavy equipment on and off elevators, and over carpet.</td>
<td>patients’ rooms, the emergency room, and surgery.</td>
</tr>
</tbody>
</table>
### TECHNICAL STANDARDS AND FUNCTIONS – Continued

<table>
<thead>
<tr>
<th>8)</th>
<th>Vision sufficient to manipulate the buttons, handles, knobs, and keyboards associated with electronic and radiographic equipment.</th>
<th>Select exposure factors which include KVp, mAs, automatic exposure controls, focal spot size, density, cassette size and type which will result in a diagnostic radiograph.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9)</td>
<td>Sufficient vision and hearing to monitor the condition of the patient during the radiographic procedure.</td>
<td>Observe and care for the physical state/condition of the patient, while looking through shielding glass, under low light conditions.</td>
</tr>
<tr>
<td>10)</td>
<td>Vision sufficient to allow good accommodation in brightly lit, as well as, dimly lit environments.</td>
<td>Move from brightly lighted hallways and rooms into dimly lighted imaging rooms or darkrooms, to process radiographs.</td>
</tr>
<tr>
<td>11)</td>
<td>Sufficient hearing to distinguish typical from non-typical sounds created by operating radiographic equipment. Must be able to distinguish sounds while standing behind a lead wall in the control area.</td>
<td>Recognize the typical sounds of the moving bucky, rotating anode, switches and relays, which indicate that the equipment is functioning properly.</td>
</tr>
<tr>
<td>12)</td>
<td>Sufficient vision to discriminate between greyscale tones associated with radiograph images and video display monitors.</td>
<td>Determine the technical quality of a radiograph by distinguishing structural differences derived by varying densities on a radiographic film or video monitor.</td>
</tr>
<tr>
<td>13)</td>
<td>Sufficient psychological stability and knowledge of techniques/resources to be able to respond appropriately and efficiently in emergent situations in order to minimize dangerous consequences either patient related or environment related.</td>
<td>Recognizing and responding appropriately in emergency situations.</td>
</tr>
<tr>
<td>14)</td>
<td>Ability to learn technical medical and pathophysiological information.</td>
<td>Completion of the clinical and didactic components of the program requires the time and the ability to learn.</td>
</tr>
</tbody>
</table>

You need to be able to perform each of these tasks with or without accommodation if an accommodation is necessary because of a disability it is your responsibility to provide documentation and to request accommodation. The college will endeavor to satisfy requests for reasonable accommodations however it is not guaranteed.

Please sign and return this Technical Standards and Functions Form to the Allied Health Office along with the Radiography Questionnaire Form and Application Form.

Student Name ______________________________________

Student Signature _____________________________________ Date ______________
APPLICATION DEADLINE REMINDER: January 31 for the next Spring Semester (May)
INSTRUCTION CONCERNING PRENATAL RADIATION EXPOSURE

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 workplace."

The Nuclear Regulatory Commission's (NRC's) regulations on radiation protection are specified in 10 CFR Part 20, "Standards for Protection Against Radiation"; and 10 CFR 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 re-
quired 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


APPENDIX

QUESTIONS AND ANSWERS CONCERNING PRENATAL RADIATION EXPOSURE

1. Why am I receiving this information?

The NRC's regulations (in 10 CFR 19.12, "Instruct 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 an other 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. However, if you have not formally declared your pregnancy in writing, you need not inform the licensee of your nonpregnant status.

8.13-5
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


1Single 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.

2Copies are available at current rates from the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082 (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.
FORM LETTER FOR DECLARING PREGNANCY

This form letter is provided for your convenience. To make your written declaration of pregnancy, you may fill in the blanks in this form letter, you may use a form letter the licensee has provided to you, or you may write your own letter.

DECLARATION OF PREGNANCY

To: ________________________

In accordance with the NRC's regulations at 10 CFR 20.1208, "Dose to an Embryo/Fetus," I am declaring that I am pregnant. I believe I became pregnant in ________________ (only the month and year need be provided).

I understand the radiation dose to my embryo/fetus during my entire pregnancy will not be allowed to exceed 0.5 rem (5 millisievert) (unless that dose has already been exceeded between the time of conception and submitting this letter). I also understand that meeting the lower dose limit may require a change in job or job responsibilities during my pregnancy.

__________________________
(Your signature)

__________________________
(Your name printed)

__________________________
(Date)

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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).
Jackson College Radiography Program Handbook

I hereby acknowledge that I have received, read and understand the Jackson College Radiography student handbook. I further agree to follow all policies and procedures within the handbook. I understand while attending the clinical site for the Radiography program I am expected to follow all reasonable rules and regulations of policies and procedures of the assigned clinical site. I understand that failure to abide by these rules and regulations may result in dismissal from the Radiography Program.

Date___/___/____

Name________________________________________

Signature_____________________________________

This acknowledgement form needs to be completed and submitted to the Allied Health Office (JW 231) within ten days after receipt of the Radiography Student Handbook.