TABLE OF CONTENTS

I. Mission & Goals
   College Mission Statement ........................................................................................1
   Radiologic Technology Program Mission .................................................................1
   Program Goals ............................................................................................................1
   Program Effectiveness ...............................................................................................1
   Student Learning Outcomes ......................................................................................2

II. Profession Requirements
   A. Accreditation ..................................................................................................3
   B. ARRT Certification ..........................................................................................3
   C. Graduation Requirements .............................................................................3
   D. State Licensure ...............................................................................................3

III. Program Faculty & Advisement
   A. Faculty ............................................................................................................5
   B. Syllabi & Learning Management System .......................................................5
   C. Curriculum Sequence .....................................................................................5
   D. Progression in the Program ...........................................................................5
   E. Counseling and Advisement ..........................................................................6
   F. Incidences and Infractions .............................................................................7

IV. Attendance Policy
   A. Attendance Policy ..........................................................................................8
      1. Clinical Attendance ....................................................................................9
      2. Occurrence .................................................................................................9
      3. Inclement Weather ....................................................................................10
4. Serious Injury or Illness ................................................................. 10
5. Attendance Records ................................................................. 10

B. Miscellaneous Attendance Policies ........................................... 10
   1. Discretionary Time ................................................................. 10
   2. Banking Time ........................................................................ 10
   3. Internship Shift ..................................................................... 10
   4. Voluntary Time ..................................................................... 10
   5. Lunch Breaks ........................................................................ 10

C. Dismissal from Clinic ................................................................. 10

V. Clinical Education & Program Policies
   A. Clinical Sites & Preceptors ......................................................... 11
   B. Correlation of Clinical & Didactic Education ......................... 12
   C. Direct and Indirect Supervision ............................................... 12
      1. Direct Supervision .............................................................. 12
      2. Indirect Supervision ............................................................ 13
   D. Student Repeat Radiograph Policy ........................................ 13
   E. Violation of Supervision Policies ............................................ 13
   F. Magnetic Resonance (MR) Safety ........................................... 14
   G. Clinical Grading ................................................................. 14
   H. Clinical Competencies .......................................................... 14
      1. Documented Practices ......................................................... 15
      2. Grading ............................................................................ 15
      3. Submission ....................................................................... 15
      4. Validation ........................................................................ 15
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Failed Attempts</td>
<td>15</td>
</tr>
<tr>
<td>6. Consistency</td>
<td>16</td>
</tr>
<tr>
<td>I. Clinical Competency Simulations</td>
<td>16</td>
</tr>
<tr>
<td>J. Evening Experience</td>
<td>16</td>
</tr>
<tr>
<td>K. CT / Special Imaging Areas Experience</td>
<td>17</td>
</tr>
<tr>
<td>L. Mammography</td>
<td>17</td>
</tr>
<tr>
<td>M. Workplace Hazards / Injury / Illness</td>
<td>17</td>
</tr>
<tr>
<td>N. Communicable Diseases</td>
<td>18</td>
</tr>
<tr>
<td>O. Standard Precautions</td>
<td>18</td>
</tr>
<tr>
<td>P. Clinical Orientation Requirements</td>
<td>19</td>
</tr>
<tr>
<td>Q. Pregnancy Policy</td>
<td>20</td>
</tr>
<tr>
<td>R. Radiation Safety / Monitoring Reports</td>
<td>21</td>
</tr>
<tr>
<td>S. Right to Appeal</td>
<td>22</td>
</tr>
<tr>
<td>T. Rotation Guidelines</td>
<td>22</td>
</tr>
<tr>
<td>U. Schedule</td>
<td>23</td>
</tr>
<tr>
<td>V. Personal Appearance Policy</td>
<td>24</td>
</tr>
<tr>
<td>W. Grievance Procedure</td>
<td>25</td>
</tr>
<tr>
<td>X. Chemical Impairment</td>
<td>26</td>
</tr>
<tr>
<td>Y. Energized Laboratory Policy</td>
<td>26</td>
</tr>
<tr>
<td>Z. Progress / Grading Scale; Academic</td>
<td>27</td>
</tr>
<tr>
<td>AA. Re-entry Policy</td>
<td>27</td>
</tr>
<tr>
<td>BB. Responsibilities, Rights, and Conduct</td>
<td>28</td>
</tr>
<tr>
<td>CC. Weather: Inclement</td>
<td>28</td>
</tr>
<tr>
<td>DD. Cell Phone and Electronic Device Policy</td>
<td>28</td>
</tr>
<tr>
<td>EE. Cell Phone and Electronic Device Policy</td>
<td>28</td>
</tr>
</tbody>
</table>
EE. Social Networking Policy ................................................................. 29
FF. Tutoring Policy ............................................................................... 29
GG. JRCERT Allegations of Non-Compliance .................................. 30
HH. Other Policies ............................................................................... 31
Appendices

A. JRCERT Standards.................................................................32
B. Course Sequence Sheet .........................................................43
C. Objectives for CT/Special Imaging Areas ..............................44
D. Objectives for Evening Shift .................................................48
E. Clinical Competency Evaluation .........................................49
   Guidelines for Completing Clinical Competencies ..................51
F. C-Arm Competency Evaluation ............................................56
G. Course Descriptions ...........................................................57
H. Clinical Competency Requirements .....................................59
I. MRI Screening Form ...........................................................64
J. ASRT Code of Ethics .............................................................65
K. List of Required Textbooks ..................................................66
L. Organizational Chart ...........................................................68
I.

Mission & Goals
College Mission Statement

Delaware Technical Community College – Students are at the center of everything we do. We empower students to change their lives through comprehensive educational opportunities and support services. As the state’s only community college, we provide quality education that is accessible, relevant, and responsive to labor market and community needs while contributing to Delaware’s economic vitality. We value all individuals and provide an inclusive environment that fosters equity and student success.

Radiologic Technology Program Mission

The Radiologic Technology Program provides comprehensive, educational experiences that enable qualified students to acquire the knowledge, skills and behaviors necessary to be eligible for certification by the American Registry of Radiologic Technologists (ARRT) and employment as radiologic technologists.

Program Goals (Program Graduate Competencies – PGC’s)

The program goals listed below identify the knowledge and skills required of graduates to be successful in the field of radiologic technology.

1. Graduates demonstrate clinical competence by performing a full range of radiologic procedures on all patient populations.
2. Graduates professionally utilize verbal, nonverbal and written communication in patient care intervention and professional relationships.
3. Graduates demonstrate professional growth and development by practicing the profession’s code of ethics and comply with the profession’s scope of practice.
4. Graduates demonstrate critical thinking and problem solving skills in the performance of radiographic procedures.

Program Effectiveness

Program effectiveness data includes the following intended outcomes. Benchmarks are as follows:

1. Program completion rate: 50% retention rate, annually.
2. Credentialing examination pass rate: Five-year average credentialing examination pass rate of not less than 75 percent at first attempt within six-months of graduation.
3. Job placement rate: Five-year average job placement rate of not less than 75 percent within twelve months of graduation, for those actively seeking employment.
4. Graduate satisfaction: Overall program satisfaction of 3 or higher on a 5 point scale.
5. Employer satisfaction: Overall program satisfaction of 3 or higher on a 5 point scale.
**Student Learning Outcomes**

**Goal 1: Demonstrate clinical competence by performing a full range of radiologic procedures on all patient populations.**

Students competently perform a full range of radiologic procedures.
Students set safe and effective technical factors.
Students practice radiation safety.

**Goal 2: Professionally utilize verbal, nonverbal and written communication in patient care intervention and professional relationships.**

Students demonstrate effective written communication skills.
Students demonstrate effective oral communication skills.
Students demonstrate appropriate nonverbal communication skills.
Students are culturally competent in patient interaction.

**Goal 3: Demonstrate professional growth and development by practicing the profession’s code of ethics and comply with the profession’s scope of practice.**

Students demonstrate professionalism.
Students demonstrate knowledge of ethical issues.
Students demonstrate knowledge of advancement in the field.

**Goal 4: Demonstrate critical thinking and problem solving skills in the performance of radiographic procedures.**

Students adapt standard procedures for non-routine patients.
Students demonstrate the ability to alter techniques in a variety of non-routine situations.
Students demonstrate critical thinking skills.
Students appropriately evaluate images.
II.

Profession Requirements
A. ACCREDITATION

The Radiologic Technology Program is voluntarily accredited by the Joint Review Committee on Education in Radiologic Technology. The JRCERT is the only agency recognized by the United States Department of Education and the Council on Higher Education Accreditation for the accreditation of programs in radiography. The JRCERT awards accreditation to programs demonstrating substantial compliance with STANDARDS established by the JRCERT. A copy of the STANDARDS is included in this handbook (Appendix A).

Joint Review Committee on Education in Radiologic Technology
20 North Wacker Dr., Suite 2850
Chicago, IL 60606-31892
312-704-5300
mail@jrcert.org
www.jrcert.org

B. ARRT CERTIFICATION

The radiography credentialing examination is administered by the American Registry of Radiologic Technologists (ARRT). Radiologic Technology students who successfully complete all academic and clinical requirements, as determined by the program director, may be eligible to sit for this exam.

Candidates for ARRT certification will be required to disclose felony and misdemeanor charges during ARRT application. Candidates may request an ethics review through the ARRT (www.arrt.org). The ARRT will determine each student’s eligibility for certification.

C. GRADUATION REQUIREMENTS

All academic and clinical requirements must be satisfied by each student for graduation eligibility. Students must maintain a grade of C (2.0) or higher in each course to be eligible for graduation. Should a student fail to meet these requirements, graduation will be delayed until all requirements are met. Reference the graduation policy found in the DTCC student handbook.

D. STATE LICENSURE

The State of Delaware requires that all persons who operate x-ray equipment (excluding students in training) be certified by the state.

Certification can be obtained by:
   a. successfully passing the state licensure exam
   b. successfully passing the ARRT Exam, submitting an application, and paying a fee

Further information can be obtained by contacting:

   Delaware Division of Public Health
   Office of Radiation Control
   417 Federal Street
   Dover, DE  19903
   (302) 744-4546
   http://www.dhss.delaware.gov/dhss/dph/hsp/orc.html
Graduates seeking licensure in the state of Maryland, may contact:

Maryland Board of Physicians
4201 Patterson Avenue
Baltimore, MD 21212
1-410-764-4777 or 1-800-492-6836
www.mbp.state.md.us
III.

Program Faculty & Advisement
A. FACULTY

Program Director / Department Chair

Kristie Bentley, M.Ed., RT(R)(CV)
(302) 259-6680
kristie.bentley@dtcc.edu

Clinical Coordinator

Terri Hitchens, M.Ed., RT(R)
(302) 259-6681
terri.hitchens@dtcc.edu

Didactic Instructor

Morgan Jones, M.A., RT(R)(M)
(302) 259-6682
morgan.jones@dtcc.edu

B. SYLLABI & LEARNING MANAGEMENT SYSTEM

Course syllabi can be found at https://syllabi.dtcc.edu/. Course specific syllabi links are posted in the learning management system (LMS) each semester. Course schedules detailing the course plan for the semester are also posted in the LMS. Course descriptions are found in Appendix G.

Students are expected to access the LMS on a continual basis to receive relevant course information and documents.

C. CURRICULUM SEQUENCE

The Radiologic Technology Program curriculum assesses affective, cognitive and psychomotor domains, and is developed using the current American Society of Radiologic Technologists (ASRT) radiography curriculum. The course sequence sheet (see Appendix B) lists core and major support courses by semester. Refer to the ASRT website www.asrt.org for curricular requirements.

D. PROGRESSION IN THE PROGRAM

Each RAD course has required prerequisites as listed on the Course Sequence Sheet. The student is responsible for fulfilling prerequisite requirements before progressing through the curriculum.

While enrolled in the program, if a student withdraws or fails a course that is a prerequisite for the next semester, it is the student’s responsibility to contact the Program Director to discuss re-entry procedures.

Any student that withdraws or fails must return the program issued radiation monitor to the Program Director. Failure to do so will result in a data hold being placed on the student’s college account.
E. COUNSELING AND ADVISEMENT

1. COUNSELING

College counseling services are outlined in the DTCC Student Handbook. Student Affairs’ academic counselors provide a variety of counseling services to students.

The program understands the challenges students face in completing a college degree. It is the program’s philosophy and intent to provide an environment conducive to student learning and to support the student in successfully completing the program. The student may make appointments with the program faculty at any time to discuss issues or concerns. If necessary, outside referral options will be given to the student for counseling beyond the program’s or college’s expertise.

2. ADVISEMENT PROCEDURES

Students enrolled in the Radiologic Technology program are expected to adhere to the policies and procedures of the program, college, and clinical affiliates. This includes, but is not limited to academic and clinical policies, and professional behaviors. Students who are not functioning in accordance with the stated policies, or are not meeting academic requirements, will be advised by the appropriate program faculty.

Procedure for Academic Advisement:
- Class grades will be posted in the learning management system’s gradebook. Individual assessment grades and weighted totals will be available to students on an ongoing basis.
- Students who receive below 70% on individual assessments will receive an email from the instructor requesting a meeting to discuss progress.
- Midterm grades are generated through the Student Information System. Students whose average is below 70% at midterm will be required to meet with the instructor to identify areas of weakness and discuss a plan for improvement.

Procedure for Clinical Advisement:
- Students will receive “weekly evaluations” from clinical preceptors.
- Midterm clinical evaluations will be presented by clinical instructors and/or the clinical coordinator with each student. If significant areas of improvement are noted, the student will be required to develop an action plan.

Procedure for Behavioral Advisement:
- A counseling form will be submitted via Trajecsys for any student who exhibits unprofessional behavior, whether on campus or during clinical.
In all situations, the student will be made aware of the implications their actions or behavior may have on their clinical or didactic progress. When the advisement procedures above are not effective, disciplinary action on the following page(s) may be implemented.
F. INCIDENCES / INFRACTIONS

The following infractions may impact clinical grading:
1. Breach of confidentiality/HIPAA
2. Breach of professional ethics/behavior
3. Disregard of safety/fire and smoking regulations
4. Refusal to carry out assignment
5. Violation of radiation safety policies / ALARA principles*
6. Disregard of Standard Precautions
7. Violation of JRCERT STANDARDS

The following may delay program completion:
1. Clinical failure
2. Academic failure
3. Second violation of JRCERT STANDARDS
4. Severe disciplinary problems
5. Third violation of radiation safety policies / ALARA principles*
6. Blatant disregard of program policies
7. Endangering the welfare of others
8. Unauthorized use or removal / theft of property belonging to clinical sites / college
9. Possession or under the influence of alcohol or drugs
10. Fighting, assault, intent to harm

*Any exposure resulting in unnecessary irradiation to the patient, staff, or self will be considered a violation of radiation safety/ALARA.

This list of infractions is not all inclusive. Any infractions or problems that arise that are not listed will be evaluated on a case by case basis by the program faculty. Impact on clinical grading will be based on the severity of the infraction.

Students are expected to abide by all clinical site policies and procedures. Individual clinical affiliates reserve the right to exclude any student from continuing in clinical internship at their site.

Refer to the Standards of Student Conduct, DTCC student handbook.
IV.
Attendance Policy
A. ATTENDANCE POLICY

Attendance is directly linked to success in the course. Therefore, students are expected to attend all class sessions. At Delaware Tech, attendance is defined as:

- Physically attending an on-campus course. In the event physical attendance is not possible, attendance may also be fulfilled by contacting the instructor in advance of the missed class and submitting missed work and/or other academic assignments as defined by the instructor. (Note: Some courses require physical attendance due to external accreditation requirements or regulations.)

- Engaging in an academic activity in a distance education course. Logging on to the learning management system or a tutorial without active participation does not demonstrate attendance.

The College will withdraw students who do not attend within the first two weeks of the course. For classes shorter than 15 weeks, the College will withdraw students who do not attend within the first week of the course. The withdrawal will not affect the student’s GPA, but the student is still financially responsible for all tuition and fees for the course. Financial aid will not be available for the course.

Students who have excessive unexcused absences or fail to maintain adequate academic engagement, as defined by the program/course policies, will receive a failing grade of a U (unofficial withdrawal) for the course, which will negatively affect the student’s GPA. The student is financially responsible for all tuition and fees for the course. Financial aid may be reduced, and financial aid eligibility may be affected.

After monitoring attendance in class, instructors may choose to notify students who are not attending; however, it is the student’s responsibility to attend class.

Students are expected to attend all radiography classes and clinical sessions in order to achieve the maximum benefit from educational activities. In the event of an absence, the student will be responsible for all class work missed regardless of the reason for absence. The student must be aware that class/lab absences may adversely affect the student’s ability to perform successfully in clinic due to the correlation of classroom theory and clinical application. Standards for performance are defined throughout this handbook, in the course syllabi, and ASRT and ARRT websites.

Radiologic Technology, like other health professions, is different from most service industries in that illness has no concept of time and thus requires round the clock availability of personnel. Diagnostic imaging has the potential to affect the well-being of patients since medical diagnosis and treatment often rely on radiographic findings.

Attendance at clinical internship during regularly scheduled hours is critically important. Appropriate supervision of the student is necessary to accomplish the learning and performance objectives in accordance with established guidelines and can be completed only when certain supervisory and
teaching personnel are present. Also, variable rotations and procedures are available primarily during these times. Students, whether first or second year, are assigned specific internship days and times.

**When possible, scheduling of personal appointments should be avoided during clinical time.**

Students cannot miss planned experiences and gain the knowledge needed to complete course objectives and requirements. The acquisition of knowledge and skill in radiologic technology is cumulative both in theory and lab/clinical education; therefore, attendance and participation are essential.

Students are never scheduled in excess of 10 hours per day, or 40 hours per week combined for courses and clinic.

**CLINICAL ATTENDANCE**

The following policy will apply to all clinical internship rotations.

**OCCURRENCE:** Any instance when a student is not present during their assigned clinical days/times.

The following instances will be considered an occurrence.

- **Absence:** Failure to report to clinical site for entire day.
- **Tardiness:** Arrival to clinic after the assigned time.
- **Leaving early:** Leaving clinic before designated departure time.

Students are scheduled for clinic 240 hours during RAD160 and RAD161; 380 hours during RAD162; 360 hours during RAD260 and RAD261. Total hours are approximate.

1. If an occurrence is unavoidable due to serious illness or emergency, it MUST be reported to the clinical site, Program Director, Mrs. Bentley, and Clinical Coordinator, Mrs. Hitchens one hour prior to the student’s scheduled time.

   Mrs. Bentley: kristie.bentley@dtcc.edu
   Mrs. Hitchens: terri.hitchens@dtcc.edu

2. Occurrences not reported to the clinical site, Program Director, and Clinical Coordinator one hour prior to the time the student is scheduled for clinic will be unexcused, and may negatively impact the student’s clinical grade.

Excessive occurrences may inhibit a student’s ability to meet clinical objectives. A student who does not meet all clinical objectives during a semester may receive a grade of “F” for that clinical course.
INCLEMENT WEATHER: Students are not required to report to clinic when the Owens Campus is CLOSED for inclement weather, however failure to report to clinic when the Owens Campus is OPEN will result in an occurrence. When the Campus opening is delayed (ex: opens at 10 a.m.) students are required to report to clinic at that time, and if the Campus closes early for inclement weather, students will be dismissed from clinic at that time.

SERIOUS INJURY or ILLNESS: If a student has multiple occurrences due to a serious injury or illness, a statement from a healthcare provider verifying that the student can return to clinic will be required. The program faculty will determine if clinical objectives have been met despite absences. Students may exercise the medical withdrawal which is requested through the Dean of Instruction.

ATTENDANCE RECORDS: Trajeccsys will be utilized to monitor clinical attendance.

B. MISCELLANEOUS ATTENDANCE POLICIES:

1. Discretionary Time
Discretionary Time is NOT allowed. This is defined as any internship time that is a variation of a student’s regularly assigned internship schedule. Examples of Discretionary Time not allowed are: a student wanting to leave internship early or come in early, and clinical preceptor or other radiology personnel giving the student permission to vary internship time other than that which has been assigned.

2. Banking Time
Banking Time is NOT allowed and is defined as: a student completing internship time in advance of an anticipated occurrence.

3. Internship Shift
Internship shifts may vary at the discretion of the clinical site between 7:00 a.m. to 5:00 p.m. However, during an internship shift a student must be in attendance at the clinic site for not less than eight hours, excluding lunch.

4. Voluntary Time
Students will NOT be permitted to attend clinic on voluntary time (ex: holidays, winter break, weekends, spring break, etc.).

5. Lunch Breaks
Students will be given a 45 minute lunch break during internship. Lunch schedules will be determined by the clinical preceptor or department supervisor on a daily basis.

C. DISMISSAL FROM CLINIC

If a student is dismissed from clinic by the clinical preceptor and/or staff, the Program Director must be contacted immediately. A reason for the dismissal must be documented and the student’s clinical grade may be affected adversely. If a student leaves clinic early due to any reason, the Program Director and Clinical Coordinator MUST be contacted as stated in item #1 under “Clinical Attendance”.

10
V. Clinical Education & Program Policies
A. CLINICAL SITES & PRECEPTORS

Bayhealth Hospital-Kent Campus
640 South State Street
Dover, DE  19901
(302) 744-7054
Contact:  Aliesha Goicoechea RT(R) (aliesha_goicoechea@bayhealth.org)  
          Samantha Neeld RT(R) (samantha_neeld@bayhealth.org)

Bayhealth Hospital-Sussex Campus
100 Wellness Way
Milford, DE  19963
(302) 430-5676
Contact:  Becky Robinson RT(R) (rebecca_robinson@bayhealth.org)

Beebe Healthcare
424 Savannah Road
Lewes, DE  19958
(302) 645-3416
Contact:  Gina Harrell RT(R) (gharrell@beebehealthcare.org)

Beebe Health Campus
1894 John J. Williams Highway
Rehoboth, DE 19971
(302) 645-3010, ext. 2454
Contact:  Scot Williamson RT(R) (scwilliamson@beebehealthcare.org)

Nanticoke Health Services
801 Middleford Road
Seaford, DE  19973
(302) 629-6611, ext. 2389 or 2107
Contact:  Shawna Johnson RT(R) (johnsonsl@nanticoke.org)

Nanticoke Health Services-Immediate Care Seaford
100 Rawlins Dr.
Seaford, DE 19973
(302) 629-6611, ext. 8620
Contact:  Karen Sturgeon RT(R) (sturgeonk@nanticoke.org)
B. CORRELATION OF CLINICAL & DIDACTIC EDUCATION

Clinical internship experience is correlated with didactic instruction. Clinical education incorporates all concepts taught in the classroom, and it is imperative that the knowledge and skills acquired in the classroom be reinforced and applied in the clinical setting. The clinical coordinator, preceptors, and staff technologists supervise and evaluate students during clinical internship. Ongoing feedback is provided as students progress through clinical courses.

The students’ psychomotor skills are evaluated by their performance in both clinical and laboratory experiences; including practice exams, competencies, and simulations.

The students’ cognitive skills are evaluated in the classroom through exams, projects, and written and oral reports.

C. DIRECT AND INDIRECT SUPERVISION

JRCERT Standards provide the following policies for supervision. (See Appendix A)

1. Direct Supervision: Student supervision by a qualified radiographer, who; reviews the procedure in relation to the student’s achievement, evaluates the condition of the patient in relation to the student’s knowledge, is present during the conduct of the procedure, and reviews and approves the procedure and/or image.

   a. Students must be directly supervised until competency is achieved.

   b. A qualified radiographer reviews the examination request and evaluates the condition of the patient to ensure that the procedure falls within the student’s level of achievement.

   c. A qualified radiographer remains with the student at all times during the procedure.

   d. A qualified radiographer reviews and approves images.

   e. All mobile radiographic exams must be performed under the direct supervision of a qualified radiographer, regardless of level of competency achieved by the student.

   f. All surgical and fluoroscopy exams must be performed under direct supervision, regardless of level of competency achieved by the student.

   g. All pediatric exams (0-5 years of age) must be performed under the direct supervision, regardless of level of competency achieved by the student.
2. **Indirect Supervision**: Supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement. “Immediately available” is interpreted as the physical presence of a qualified radiographer adjacent to the room or location where a radiographic procedure is being performed. This availability applies to all areas where ionizing radiation equipment is in use on patients.

   a. Once competency has been achieved, the student may perform radiographic procedures under indirect supervision.

   b. All radiographic images, regardless of the level of student competency, will be reviewed and approved by a qualified radiographer.

**D. STUDENT REPEAT RADIOGRAPH POLICY**

Repeat images must be completed under direct supervision. The presence of a qualified radiographer during the repeat of an unsatisfactory image assures patient safety and proper educational practices. A qualified radiographer must approve the student’s procedure prior to re-exposure, regardless of student’s level of competency.

Specific parameters are as follows:

   a. If it is determined by a qualified radiographer that a repeat radiographic image must be taken, the student shall repeat only with instruction from, and in the presence of the qualified radiographer.

   b. If a student is asked to repeat a radiographic image without the presence of qualified radiographer, he/she is to respectfully refuse, explaining that it is a violation of JRCERT supervision policies.

**E. VIOLATION OF SUPERVISION POLICIES**

1. If it is documented that a student has violated a supervision policy and it is the first offense, a meeting will be held between the program director, clinical coordinator, and the student documenting the serious nature of the offense and the consequences of a second offense.

2. If it is documented that a student has violated a supervision policy and it is the second offense, a meeting will be held between the program director, clinical coordinator, and the student. In accordance with patient safety standards, a second offense may result in an “F” grade (“W” if applicable) for the clinical course.

A written record of proceedings will be kept in the student’s file.
F. MAGNETIC RESONANCE (MR) SAFETY

MR images are acquired utilizing a very strong magnetic field and radiofrequencies. The MR system’s magnet is always on, and therefore poses potential workplace hazards. Radiofrequencies are capable of heating metal objects, on or inside of patients, and may cause burns.

Radiography students will complete an observation in MRI during RAD260 or RAD261, and potentially access the MR environment prior to that semester/assignment. To assure safety for patients, staff, and students, an MR safety module (https://www.ismrm.org/mr-safety-links/) and a screening form (Appendix I) will be completed by all students prior to clinical internship.

The Clinical Coordinator will review the screening form and discuss any areas marked “yes” with the appropriate clinician. Students must inform the program of any changes that could affect the status of their MR screening.

G. CLINICAL GRADING

Clinic grades are computed using the following assessments dependent upon semester:

1. Affective and Technical Skills Evaluation
2. Clinical Competency Evaluation (see Appendix E)
3. C-arm Competency (Appendix F)
4. Clinical Assignments
5. Written exams
6. Formative/Summative Assessments
7. Projects

Appendix H: Clinical Competency Requirements

H. CLINICAL COMPETENCIES

A student may not attempt to document practices or achieve competency until he/she has successfully passed lab check off (when applicable). In the event that a student is unsuccessful during lab check off, the instructor will schedule a make up within one week. A second unsuccessful attempt at lab check off will require remediation prior to documenting practices or achieving competency. The remediation process (Trajecsys form) is initiated by program faculty, and completed by a clinical preceptor or clinical coordinator.

Competencies are performed under direct supervision. When a student declares competency but the procedure or condition of the patient is outside of the student’s achievement level, the student and technologist should perform the exam together. This will assure patient safety and proper educational practices.
1. **Documented Practices:**
Prior to achieving competency, students must successfully (>85%) complete the minimum number of documented practices. In situations where a student is unsuccessful (<85%) on documented practices, competency will not be permitted without additional successful practices.

A minimum number of practices has been established for most procedures, however, students may need additional exposure to exams before achieving competency.

2. **Grading:**
A minimum score of 85 percent is required for competency.

Students are required to successfully achieve the minimum number of competency exams each semester as outlined in the Clinical Competency Requirements (Appendix H). Students that fail to meet the required number of competencies by the end of each semester, may receive an “I” grade for the clinical course. All objectives must be met prior to the beginning of the next semester, and the “I” grade changed to passing grade. A maximum number of competencies has also been established for each semester.

3. **Submission:**
All competencies and practices must be documented in Trajecsys WITHIN 24 HOURS of completion. For example, a competency performed on Monday, October 1, must be submitted no later than Tuesday, October 2. Completed competencies submitted after 24 hours will not be accepted.

Students are responsible for following up with the supervising technologist to assure competencies are documented within the appropriate timeframe.

4. **Validation:**
Competencies must be validated by faculty prior to post-comp and indirect supervision.

5. **Failed Attempts:**
All unsuccessful competencies require two documented practices (>85%) prior to a second attempt.

Upon the second unsuccessful competency attempt for the same procedure, the failed evaluations and accompanying practices will be assessed by the clinical coordinator, and the student will be remediated prior to a third attempt. After remediation is concluded, the coordinator will submit a detailed summary in Trajecsys.

The student will be required to complete an additional two practices after remediation, and prior to a third attempt. A third competency attempt must be performed with a clinical preceptor or coordinator.
Failure to achieve competency on the third attempt will result in a meeting between the student, clinical preceptor, and clinical coordinator to discuss student progress and clinical grading.

6. **Consistency:**
Successful clinical competencies may be revoked if a student is unable or unwilling to perform in a consistent manner following competency. Revoking a competency may only be done using the following procedure:

Student has performed a previously documented competency in an unsatisfactory manner 2 times, OR the student refuses to perform an exam after achieving competency.

Documentation must be completed for EACH of the 2 unsatisfactory exams in question, and must include the following:

- a. documented in Trajecsys including the date the examination was performed, and patient/exam number;
- b. include specific reasons why the examination was declared unsatisfactory;
- c. be approved by the clinical coordinator.

I. **CLINICAL COMPETENCY SIMULATIONS**

A student who does not complete all ARRT competency requirements by the end of RAD261 Clinical Radiography V, will be permitted to simulate according to ARRT criteria. All objectives completed under simulated conditions will receive a maximum grade of 85%. Failure to complete clinical competency requirements will delay completion of the program and graduation.

J. **EVENING EXPERIENCE**

During RAD260 and 261, students will be scheduled for evening hours to enrich the total internship experience.

The following guidelines shall define hours other than day shift:

1. The experience shall exclude Saturday, Sunday and Holidays.
2. The experience shall be limited to one student per shift assignment.
3. The student shall be assigned only when a qualified radiographer is on duty and in attendance for direct and indirect supervision.
4. Shift assignments shall be limited to 12:30 p.m. through 9:00 p.m.
5. All students shall have equal opportunity for evening shift experience.
6. A minimum of at least one evening shift per student will be scheduled for RAD260 and RAD261.
7. The total number of hours per week shall not exceed those regularly scheduled (24 hours per week).
8. Second year students interested in additional evening experience may be scheduled at the discretion of the program.
Objectives and evaluation tool for the clinic evening experience are found in Appendix D.

K. **CT / SPECIAL IMAGING AREAS EXPERIENCE**

During RAD260 and 261, students will be scheduled for special imaging area rotations to enrich the total internship experience.

The following guidelines will apply to this experience:
1. The experience shall be limited to one student per imaging area.
2. The student shall be assigned to a special imaging area only when a qualified technologist is on duty and in attendance for direct supervision for that particular imaging modality.
3. All students shall have equal opportunity for special imaging experiences.
4. Two eight (8) hour rotations per student will be scheduled in each of the following imaging modalities: Magnetic Resonance Imaging (MRI), Ultrasound (US), and Nuclear Medicine (NM). Students will rotate through each of the 3 areas in RAD260 and in RAD261.
5. Special imaging area experiences will be observation only.
6. Students will rotate through CT for one week (3 days) in the fall semester (RAD260) and for one week (3 days) in the spring semester (RAD261).

Objectives for the CT / special imaging areas are found in Appendix C.

*Note: Students are required to complete an MR safety module and screening form (Appendix I) prior to attending clinical internship.*

L. **MAMMOGRAPHY**

The program will make every effort to place students in a mammography rotation if requested; however, the program is not expected to attempt to override clinical site policies that restrict mammography rotations to female students. Male students are advised that placement in a mammography rotation is not guaranteed and, in fact, would be very unlikely.

M. **WORKPLACE HAZARDS / INJURY / ILLNESS**

Any student that has experienced an injury and/or illness while attending clinic must have the clinical facility submit associated documentation to the program. The program must be notified in a timely manner of the incident. If the injury and/or illness warrants medical attention, the student must follow the procedures of the clinical facility and submit documentation of treatment to the program. The student is responsible for all costs incurred as a result of injury or illness, and must carry their own medical insurance.

Clinical facilities follow procedures in accordance with the Occupational Safety and Health Administration (OSHA). Each facility maintains protocols to follow for the health and safety of staff and students.
Any student who is ill or potentially infectious should take into consideration the implications of being in contact with patients, especially those who are immuno-compromised.

N. COMMUNICABLE DISEASES

The program will follow the policy for Communicable Diseases as stated in the DTCC Student Handbook, as well as, any policies set forth by the clinical facilities in regard to communicable diseases. Students will follow college and clinical affiliate policies/procedures regarding Coronavirus.

https://www.dtcc.edu/about/news-events/coronavirus-update

O. STANDARD PRECAUTIONS

Occupational exposure to blood borne and other pathogens are possible in healthcare facilities. Standard Precautions are designed to reduce the risk of transmitting pathogens. Standard Precautions are used during the care of all patients.

Standard Precautions apply to:
1. blood
2. all body fluids
3. secretions and excretions
4. nonintact skin
5. mucous membranes

The following guidelines will reduce transmission of microorganisms:

1. Handwashing
   a. Wash hands before and after touching blood, body fluids, secretions, excretions and contaminated items, whether or not gloves are worn.
   b. Wash hands immediately after gloves are removed, between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments.

2. Gloves
   a. Wear gloves when touching blood, body fluids, secretions, excretions and contaminated items.
   b. Put on clean gloves just before touching mucous membranes and nonintact skin.
   c. Change gloves between tasks and procedures on the same patient after contact with material that may contain a high concentration of microorganisms.
   d. Remove gloves promptly after use, before touching non-contaminated items and environmental surfaces and before touching another patient.
   e. Wash hands immediately after use.
3. **Face Protection**  
a. Use face protection during procedures when splashes or sprays of bodily fluids is probable.

4. **Gown**  
a. Wear a gown to protect skin and clothing when soiling is probable.  
b. Remove gowns promptly after use.

5. **Patient Care Equipment**  
a. Handle used equipment in a manner that reduces transfer of microorganisms.  
b. Reusable equipment is to be cleaned and disinfected appropriately.  
c. Discard single-use items promptly.

6. **Environmental Control**  
a. Adequately clean routine patient care areas with the appropriate solutions provided by the facility.

7. **Linen**  
a. Handle soiled linen in a manner that reduces the transfer of microorganisms to other areas and non-contaminated items.

8. **Occupational Health and Bloodborne Pathogens**  
a. Handle sharp instruments with care to prevent accidental sticks.  
b. Never recap used needles.  
c. Do not remove needles from disposable syringes by hand.  
d. Place used sharps in the appropriate puncture-resistant biohazard containers.  
e. Use mouthpieces, resuscitation bags or other ventilation devices as an alternative to mouth-to-mouth resuscitation.

**P. CLINICAL ORIENTATION REQUIREMENTS**

Program faculty and/or the clinical affiliate representative will verify the student’s completion of the following requirements. Students will not be eligible for clinic, or permitted to continue, until all requirements are met.

1. **BLS**  
2. **Health History**  
3. **Documented Immunizations (influenza and TB annually)**  
4. **Criminal Background / Fingerprints**  
5. **Drug Screening**  
6. **Technical Standards Verification**  
7. **Online Clinical Education (site specific)**  
8. **Hospital Orientation**  
9. **Checklist of Radiation Safety Devices (first week of clinical orientation)**
Q. **PREGNANCY POLICY**

Radiologic Technology is safe when appropriate precautions are taken for protection from potentially harmful ionizing radiation. *Disclosure of pregnancy to the program is strictly voluntary.* In the absence of voluntary, written disclosure, a student cannot be considered pregnant.

A student voluntarily and in writing making notification to the program director that she is pregnant may:

- provide a physician’s note to continue in the program without modification
- re-enter the program at a later date if she chooses to delay completion
- submit a written withdrawal of declaration.

However, because the human fetus is sensitive to ionizing radiation, the declared pregnant student, who provides a physician’s note to continue in the program without modification, is encouraged to request an additional monitoring badge that will be worn on the torso.

If a student voluntarily declares in writing that she is pregnant, then a meeting will be scheduled with the Program Director, Clinical Coordinator and student to discuss the best options for the student.

The NCRP (National Council on Radiation Protection and Measurements) Report No. 116 recommends an annual dose limit for education and training exposures of 1 mSv (100 mrem). In situations where student badge readings approach the 1 mSv annual dose limit, the student will be counseled and corrective action will be taken if deemed necessary. Radiation monitoring reports are made available to the student.

All clinical facilities and the program adhere to the ALARA “as low as reasonably achievable” principle in keeping exposure limits well below the maximum allowable limits. Adhering to the stated protocols of ALARA and the NCRP poses minimal risk to the pregnant student.
R. RADIATION SAFETY / MONITORING REPORTS

To keep radiation exposure to the student and patient as low as reasonably achievable, the following guidelines must be adhered to:

1. Students are not permitted in the radiographic suite while radiographic exposures are being made except for portables, surgery, and procedures requiring fluoroscopy.

2. When it is necessary for the student to be in the radiographic room during an exposure noted in (1) above, the appropriate protective apparel must be worn.

3. Students are not permitted to hold image receptors during any radiographic procedure.

4. Students are not permitted to hold patients during any radiographic procedure. Immobilization methods are the appropriate standard of care.

5. Regardless of the level of student competency, repeat radiographic images are performed only under direct supervision by a qualified radiographer.

6. Radiation monitoring devices are to be worn at all times during clinical internship and energized lab activities. Failure to wear radiation monitor to clinic or lab will prevent student participation during internship or lab. Student will be permitted to return when radiation detection devices are on their person.

7. The radiation monitoring reports are maintained by the program director, who also serves as the Radiation Safety Office (RSO). Reports are made available to students within 30 days of receipt. All students will initial the report to verify that doses have been reviewed.

8. In situations where a student’s badge reading approaches the annual threshold dose limit of 1 mSv (100 mrem) the student will be counseled to determine the source of excessive exposure. Corrective action will be taken if deemed necessary. The student may be placed in a low dose area.

9. Monitoring devices are replaced each calendar quarter. All monitoring devices must be turned in and exchanged for a new one in a timely manner. **Students will incur a $30 fee for badge that is lost or damaged.**
S. RIGHT TO APPEAL

If a student is dismissed from a clinical affiliate for disciplinary reasons, the student may appeal the decision through the Program Director. The Program Director will investigate the matter on the student’s behalf. However, students must be aware that individual clinical affiliates determine each student’s eligibility at their respective institutions.

T. ROTATION GUIDELINES

To obtain ample and varied experience in diagnostic imaging procedures, students rotate through all major clinical affiliates, located in Seaford (Nanticoke Health Services), Milford (Bayhealth-Sussex), Lewes (Beebe Healthcare), and Dover (Bayhealth-Kent).

Although rotation through these affiliates may, at times, be difficult due to geographic location and personal obligations, the necessary experiences gained through site diversity outweighs the possible inconveniences. Transportation to clinical affiliates is the student’s responsibility.

Students are scheduled in areas that include routine, fluoroscopic, mobile and surgical procedures. Special imaging areas and evening rotations are included during second year internship.

Students will be assigned a clinical rotation prior to the start of RAD160 Clinical Radiography I. During the course of the program, students may be reassigned to a different clinical rotation in order to provide an equitable learning experience.

Reassignment of students to other clinical sites or groups for personal, group or clinical issues will not be permitted.

Students re-entering the program due to withdrawal or failure of previous courses will be placed in a clinical facility at the discretion of the program. The student must repeat the clinical course of the semester in which they are returning, regardless of previous grade earned. The student will be placed according to space availability and equitable educational experience for all students concerned.
U. SCHEDULE

Students are not scheduled for clinic during the following:
1. Winter Break
2. Spring Break
3. Observed Holidays
4. Weekends
5. College closings (weather related)

Student clinical hours are scheduled as follows:

FIRST YEAR
Fall Semester
16 hrs/week (Tuesday & Thursday)

Spring Semester
16 hrs/week (Tuesday & Thursday)

Summer
38 hrs/week (Monday through Thursday, 10 weeks)

SECOND YEAR
Fall Semester
24 hrs/week (Monday, Wednesday & Friday)

Spring Semester
24 hrs/week (Monday, Wednesday & Friday)
V. PERSONAL APPEARANCE POLICY

Professionalism includes personal appearance, attire, and hygiene. The following parameters are to be followed during clinical internship.

Uniforms will be Cherokee Workwear royal blue tops (Men’s 4876; Women’s 4700) and black pants (Men’s 4100; Women’s 4101). Shoes must be all black, closed toe and heel, and non-permeable. Uniforms are to be clean and pressed. Scrubs should not be form fitting nor should undergarments be visible in any manner.

1. Lab coats or jackets, if worn, must be royal blue (4350) in color.

2. Shoulder length hair must be tied back; beards and moustaches must be clean and neatly trimmed.

3. Extremes in hairstyles and/or color (pink, purple, green, etc.) and adornments (beads, sequins, etc.) are prohibited.

4. Jewelry must be minimal, earrings should not dangle and are limited to 2 piercings per ear; limited to one ring per hand. Watches are permitted; bracelets are not permitted.

5. In consideration of the patient, colognes, perfumes and after-shave lotions should not be used.

6. Uniforms are to be worn only during internship, lab, and while in transit.

7. Body piercings not commonly seen in a professional environment (example: nose, tongue, lip, eyebrow), will not be allowed during internship. Large holes/spacers in the ear are not permitted.

8. Nails will be kept short (1/4”) and well maintained; no chipped polish; single color. Artificial nails are prohibited for infection control and safety reasons. Gel polish is prohibited.

9. Body tattoos must be covered.

10. Radiation monitoring devices and identification must be worn at all times.

Violation of the personal appearance parameters stated above may result in dismissal from clinic until the student corrects the deficiency. Time missed from clinic may adversely affect the student’s clinical grade.
W. GRIEVANCE PROCEDURE

A grievance is defined as a claim by a student that there has been a violation, misinterpretation, or inequitable application of any existing policy, procedure, or regulation. Any student that feels that a violation has occurred is encouraged to use the following procedure to pursue grievances:

1. The student is encouraged to first meet with the person accused of violating the student’s rights to seek satisfactory resolution in an informal manner through discussion.

2. In the opinion of the student, if satisfactory resolution is not reached in Step 1, the student shall meet with the Program Director or Faculty to discuss and facilitate a resolution to the complaint.

3. In the opinion of the student, if satisfactory resolution is not accomplished in Step 2, the student shall file a written complaint with the Program. The written complaint shall be submitted within five (5) days after all other meetings have concluded. The complaint shall be specific including the name of the person accused, a statement of the specific right or rights alleged to have been violated by the accused, and the manner in which the right or rights is alleged to have been violated.

4. The Program Director, after reviewing the complaint, will forward a copy of the complaint to the accused who will have five (5) days to respond. The Program will investigate the allegations and notify the student and accused of his/her determination.

5. If all efforts to reach a resolution have been exhausted, and the student is not satisfied with the determination in Step 4, the student may follow through with the complaint to the Dean of Student Affairs. The student shall receive a response, in writing, of the Dean’s determination within ten (10) days from the date the written complaint was submitted.

*Reference the Procedure for The Resolution of Complaints By a Student, DTCC student handbook.
X. CHEMICAL IMPAIRMENT

Delaware Tech is a drug/alcohol free environment [https://www.dtcc.edu/academics/student-handbook/collegewide-policies](https://www.dtcc.edu/academics/student-handbook/collegewide-policies). Any student suspected of being under the influence of drugs/alcohol during classroom/lab activities or at a clinical site will not be permitted to participate in the scheduled activity.

Radiologic Technology students are required to provide safe, effective, and supportive patient care. To fulfill this purpose, radiology students must be free of chemical impairment during participation in any part of the radiologic technology program including classroom, laboratory, and clinical settings.

A chemically impaired student is defined as a person who, while in the academic or clinical setting, is under the influence of, or has abused, either separately or in combination: alcohol, over-the-counter medication, illegal drugs or prescribed medications.

Students who violate this policy shall be subject, at a minimum, to penalties as outlined in the Student Handbook.

*Refer to the Student Handbook Drug-Free School and Workplace Policy.*

Y. ENERGIZED LABORATORY POLICY

1. Students are not permitted to use the energized lab unless an instructor is available.

2. Students are required to sign in on the log sheet when using the lab.

3. Students must wear student ID and radiation monitor while using the lab.

4. The door must be completely closed while exposures are made.

5. Tube warm up must be completed when tube has not been in use for a period of 2 hours or more.

6. Exposures on human beings are prohibited. Any violation of this policy will result in immediate dismissal of the student from the program.

7. No eating or drinking in the lab.

8. Students are expected to leave the lab in good condition. Return all supplies to appropriate places. Dispose of all trash. Phantoms should be treated with respect.

9. Student images are confidential. Students are not permitted to view another student’s images without consent.

10. Students must register exams using the appropriate format of student initials and exam type (i.e. MCI_shoulder_practice).
**Z. PROGRESS/GRADING SCALE; ACADEMIC**

1. The Radiologic Technology Student Academic Progress Policy shall be the same as that stated in the College’s Student Handbook.

2. The grading scale is as follows:
   
   
   $90 - 100 = A$  
   $80 - 89 = B$  
   $70 - 79 = C$  
   $0 - 69 = F$

3. Students whose average on all evaluations for a given classroom course is below 70% will receive an “F” grade. Failure in a course that is a prerequisite for another, will delay registration for that course until the prerequisite is successfully completed. The student may be given an opportunity, on a space available basis, to repeat the course the next time it is offered.

**AA. RE-ENTRY POLICY**

To ensure that students who have previously withdrawn from, or failed a Radiologic Technology program course, are adequately prepared for re-entry into the same technology, the following policy will be applied:

1. Students are required to, in writing, request re-entry to the Program Director one semester in advance of re-entry. A formal letter documenting the student’s request should be received by June 1\(^{st}\) for fall re-entry; September 1\(^{st}\) for spring re-entry; and February 1\(^{st}\) for summer re-entry.

2. Re-entry can be considered only if a seat is available and within the year of withdrawal or failure. Students who previously withdrew with passing grades will be considered first. If there are more students requesting re-entry than seats available, the RAD “interest” matriculation date will be utilized.

3. A cumulative re-entry exam must be taken to include content from all Radiologic Technology courses that were successfully completed. A minimum score of seventy-five percent (75%) must be achieved to be considered for re-entry.

4. Current criminal background check, drug screening, and immunizations are required for re-entry. The complete list of requirements will be based on academic year of re-entry. This may be different from the original requirements for acceptance.

5. The student re-entering must retake the current semester clinical course and will be placed in a clinical rotation at the discretion of the program.

6. The Program Director will be responsible for advising the student who has submitted a written request for re-entry.
a. Upon re-entry, it is recommended that students retake all technology courses. This will allow for strengthening any weaknesses and becoming a stronger candidate for successfully completing the national certification exam.

b. If technology courses previously passed with a “C” grade or better are not retaken, the student is strongly encouraged to enroll in the courses as a listener.

7. Students will be considered for re-entry no more than one time. Students who are unsuccessful after the second attempt in the program will be required to reapply by following the Allied Health Competitive Admissions Process and, upon acceptance, will be required to start the RAD courses from the beginning.

BB. RESPONSIBILITIES, RIGHTS AND CONDUCT

As members of the college community, all students have certain responsibilities, rights, and standards of conduct that must be met while on campus and at the clinical affiliate; these, along with the mechanism for student appeal of judicial committee decisions, are outlined in the College’s Student Handbook.

*Refer to Student Rights and Standards of Student Conduct, DTCC Student Handbook.

CC. WEATHER; INCLEMENT

When DTCC Owens Campus is closed or delayed for inclement weather, student internship is affected the same as the college schedule. For example, if the college is closed for the entire day, students need not report to the clinic for that entire day. If college is delayed, students need not report to clinic until the college opens. Missed internship time due to college closing or delay does not affect the student’s grade. For notifications of college closings and delays, make sure that personal settings are updated on the Delaware Tech Alert system.

DD. CELL PHONE AND ELECTRONIC DEVICE POLICY

This policy is implemented in order to maintain a productive, safe learning environment and applies to both incoming and outgoing cellular calls.

Cell phones and electronic devices shall be turned off or set to silent or vibrate mode during classes, conferences, and in other campus locations where their use would cause a distraction to the learning environment.

Cell phone and electronic device use is prohibited during all testing and assessment activities.

The College strictly prohibits the use of camera phones and other recording devices in any manner which violates or compromise norms of personal conduct or the expectation of privacy that individuals have a reasonable right to expect.
EE. SOCIAL NETWORKING POLICY

Social networking/social media includes, but is not limited to, networking sites such as Facebook, LinkedIn, Twitter, Instagram, etc.

Students are prohibited from accessing social networking sites while using hospital owned/leased electronic equipment, and are prohibited from accessing social networking sites while on clinic time, including accessing through personal cell phones or personal electronic media devices.

Students are prohibited from using personal electronic media devices while on clinic time to conduct personal social networking activities. Personal cell phones and personal electronic media devices may only be used for the purpose of completing clinical requirements, or in designated areas during break times.

Students are prohibited from taking pictures on any of the hospital campuses. Students are prohibited from posting any photographs online.

*Reference Electronic Mail and Other Network Activity (Use of Internet) Policy, DTCC Student Handbook.

FF. TUTORING POLICY

The Radiologic Technology faculty support student success. In order to accommodate student learning, the faculty will be available for tutoring for all program courses.

The following criterion is the responsibility of the student and must be met prior to requesting a tutoring session:

1. The student must read and study the material prior to requesting tutoring.

2. The student must be prepared with questions.

3. Any student requesting tutoring must email program faculty to schedule tutoring session. The student must include the course, topic, date and time of session requested. The program will make every effort to accommodate the requested time.

4. Tutoring will be provided by all program faculty. The instructor providing the tutoring may not necessarily be the instructor for the course.
GG. JRCERT ALLEGATIONS OF NON-COMPLIANCE

The Radiologic Technology Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). Accreditation with the JRCERT assures the public that the program meets JRCERT STANDARDS and pursues programmatic improvement.

If a student feels that the program is non-compliant with JRCERT STANDARDS, the following procedure will be implemented:

1. The student is encouraged to first meet with the program director to seek satisfactory resolution of the complaint in an informal manner through discussion.

2. If satisfactory resolution is not reached in the opinion of the student, the student may file a written complaint to the program that details the allegations of non-compliance. The written complaint shall be submitted within five (5) days of the alleged incident of non-compliance.

3. The program will respond to the student within five (5) days of the submitted written complaint.

4. If all efforts to reach a resolution to the complaint have been exhausted and the student is still not satisfied with the outcome, the student may follow through with the complaint to an external mediator (Dean of Student Affairs and/or Dean of Instruction). After investigating the allegation, the Dean(s) will have ten (10) days to provide a written response of his/her determination to the student.

5. If the student feels that the complaint has not been resolved by the College, the student may contact the JRCERT at 20 N. Wacker Dr, Suite 2850, Chicago, IL 60606-31892; 312-704-5300; mail@jrcert.org.

6. The program will maintain a record of complaints and their resolutions.

All students are provided a copy of the JRCERT STANDARDS in the Student Handbook. The handbook is reviewed with all students upon entry into the program. Students sign a receipt of information.
HH. OTHER POLICIES

Additional policies and procedures can be found using the following DTCC Handbook links:

**DTCC Student Handbook**

[https://www.dtcc.edu/academics/student-handbook](https://www.dtcc.edu/academics/student-handbook)

**Academic Policies**

[https://www.dtcc.edu/academics/student-handbook/academic-policies](https://www.dtcc.edu/academics/student-handbook/academic-policies)

**Collegewide Policies**

[https://www.dtcc.edu/academics/student-handbook/collegewide-policies](https://www.dtcc.edu/academics/student-handbook/collegewide-policies)
APPENDIX A
Standards for an Accredited Educational Program in Radiography

Effective January 1, 2021

Adopted April 2020
Introductory Statement

The Joint Review Committee on Education in Radiologic Technology (JRCERT) Standards for an Accredited Educational Program in Radiography are designed to promote academic excellence, patient safety, and quality healthcare. The Standards require a program to articulate its purposes; to demonstrate that it has adequate human, physical, and financial resources effectively organized for the accomplishment of its purposes; to document its effectiveness in accomplishing these purposes; and to provide assurance that it can continue to meet accreditation standards.

The JRCERT is recognized by both the United States Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA). The JRCERT Standards incorporate many of the regulations required by the USDE for accrediting organizations to assure the quality of education offered by higher education programs. Accountability for performance and transparency are also reflected in the Standards as they are key factors for CHEA recognition.

The JRCERT accreditation process offers a means of providing assurance to the public that a program meets specific quality standards. The process not only helps to maintain program quality but stimulates program improvement through outcomes assessment.

There are six (6) standards. Each standard is titled and includes a narrative statement supported by specific objectives. Each objective, in turn, includes the following clarifying elements:

- **Explanation** - provides clarification on the intent and key details of the objective.
- **Required Program Response** - requires the program to provide a brief narrative and/or documentation that demonstrates compliance with the objective.
- **Possible Site Visitor Evaluation Methods** - identifies additional materials that may be examined and personnel who may be interviewed by the site visitors at the time of the on-site evaluation in determining compliance with the particular objective. Review of supplemental materials and/or interviews is at the discretion of the site visit team.

Regarding each standard, the program must:
- Identify strengths related to each standard
- Identify opportunities for improvement related to each standard
- Describe the program’s plan for addressing each opportunity for improvement
- Describe any progress already achieved in addressing each opportunity for improvement
- Provide any additional comments in relation to each standard

The self-study report, as well as the results of the on-site evaluation conducted by the site visit team, will determine the program’s compliance with the Standards by the JRCERT Board of Directors.
Standard One: Accountability, Fair Practices, and Public Information

The sponsoring institution and program promote accountability and fair practices in relation to students, faculty, and the public. Policies and procedures of the sponsoring institution and program must support the rights of students and faculty, be well-defined, written, and readily available.

Objectives:

1.1 The sponsoring institution and program provide students, faculty, and the public with policies, procedures, and relevant information. Policies and procedures must be fair, equitably applied, and readily available.

1.2 The sponsoring institution and program have faculty recruitment and employment practices that are nondiscriminatory.

1.3 The sponsoring institution and program have student recruitment and admission practices that are nondiscriminatory and consistent with published policies.

1.4 The program assures the confidentiality of student educational records.

1.5 The program assures that students and faculty are made aware of the JRCERT Standards for an Accredited Educational Program in Radiography and the avenue to pursue allegations of noncompliance with the Standards.

1.6 The program publishes program effectiveness data (credentialing examination pass rate, job placement rate, and program completion rate) on an annual basis.

1.7 The sponsoring institution and program comply with the requirements to achieve and maintain JRCERT accreditation.
Standard Two: Institutional Commitment and Resources

The sponsoring institution demonstrates a sound financial commitment to the program by assuring sufficient academic, fiscal, personnel, and physical resources to achieve the program’s mission.

Objectives:

2.1 The sponsoring institution provides appropriate administrative support and demonstrates a sound financial commitment to the program.

2.2 The sponsoring institution provides the program with the physical resources needed to support the achievement of the program’s mission.

2.3 The sponsoring institution provides student resources.

2.4 The sponsoring institution and program maintain compliance with United States Department of Education (USDE) Title IV financial aid policies and procedures, if the JRCERT serves as gatekeeper.
Standard Three: Faculty and Staff

The sponsoring institution provides the program adequate and qualified faculty that enable the program to meet its mission and promote student learning.

Objectives:

3.1 The sponsoring institution provides an adequate number of faculty to meet all educational, accreditation, and administrative requirements.

3.2 The sponsoring institution and program assure that all faculty and staff possess the academic and professional qualifications appropriate for their assignments.

3.3 The sponsoring institution and program assure the responsibilities of faculty and clinical staff are delineated and performed.

3.4 The sponsoring institution and program assure program faculty performance is evaluated and results are shared regularly to assure responsibilities are performed.

3.5 The sponsoring institution and/or program provide faculty with opportunities for continued professional development.

Radiography 18
Standard Four: Curriculum and Academic Practices

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

Objectives:

4.1 The program has a mission statement that defines its purpose.

4.2 The program provides a well-structured curriculum that prepares students to practice in the professional discipline.

4.3 All clinical settings must be recognized by the JRCERT.

4.4 The program provides timely, equitable, and educationally valid clinical experiences for all students.

4.5 The program provides learning opportunities in advanced imaging and/or therapeutic technologies.

4.6 The program assures an appropriate relationship between program length and the subject matter taught for the terminal award offered.

4.7 The program measures didactic, laboratory, and clinical courses in clock hours and/or credit hours through the use of a consistent formula.

4.8 The program provides timely and supportive academic and clinical advisement to students enrolled in the program.

4.9 The program has procedures for maintaining the integrity of distance education courses.
Standard Five: Health and Safety

The sponsoring institution and program have policies and procedures that promote the health, safety, and optimal use of radiation for students, patients, and the public.

Objectives:

5.1 The program assures the radiation safety of students through the implementation of published policies and procedures.

5.2 The program assures each energized laboratory is in compliance with applicable state and/or federal radiation safety laws.

5.3 The program assures that students employ proper safety practices.

5.4 The program assures that medical imaging procedures are performed under the appropriate supervision of a qualified radiographer.

5.5 The sponsoring institution and/or program have policies and procedures that safeguard the health and safety of students.
Standard Six: Programmatic Effectiveness and Assessment: Using Data for Sustained Improvement

The extent of a program's effectiveness is linked to the ability to meet its mission, goals, and student learning outcomes. A systematic, ongoing assessment process provides credible evidence that enables analysis and critical discussions to foster ongoing program improvement.

Objectives:

6.1 The program maintains the following program effectiveness data:
   • five-year average credentialing examination pass rate of not less than 75 percent at first attempt within six months of graduation,
   • five-year average job placement rate of not less than 75 percent within twelve months of graduation, and
   • annual program completion rate.

6.2 The program analyzes and shares its program effectiveness data to facilitate ongoing program improvement.

6.3 The program has a systematic assessment plan that facilitates ongoing program improvement.

6.4 The program analyzes and shares student learning outcome data to facilitate ongoing program improvement.

6.5 The program periodically reevaluates its assessment process to assure continuous program improvement.
Awarding, Maintaining, and Administering Accreditation

A. Program/Sponsoring Institution Responsibilities

1. Applying for Accreditation

The accreditation review process conducted by the Joint Review Committee on Education in Radiologic Technology (JRCERT) is initiated by a program through the written request for accreditation sent to the JRCERT, on program/institutional letterhead. The request must include the name of the program, the type of program, and the address of the program. The request is to be submitted, with the applicable fee, to:

   Joint Review Committee on Education in Radiologic Technology
   20 North Wacker Drive, Suite 2850
   Chicago, IL  60606-3182

Submission of such information will allow the program access to the JRCERT's Accreditation Management System (AMS). The initial application and self-study report will then be available for completion and submission through the AMS.

2. Administrative Requirements for Maintaining Accreditation

   a. Submitting the self-study report or a required progress report within a reasonable period of time, as determined by the JRCERT.

   b. Agreeing to a reasonable site visit date before the end of the period for which accreditation was awarded.

   c. Informing the JRCERT, within a reasonable period of time, of changes in the institutional or program officials, program director, clinical coordinator, full-time didactic faculty, and clinical preceptor(s).

   d. Paying JRCERT fees within a reasonable period of time. Returning, by the established deadline, a completed Annual Report.

   e. Returning, by the established deadline, any other information requested by the JRCERT.

Programs are required to comply with these and other administrative requirements for maintaining accreditation. Additional information on policies and procedures is available at www.jrcert.org.

Program failure to meet administrative requirements for maintaining accreditation will lead to Administrative Probationary Accreditation and potentially result in Withdrawal of Accreditation.

Radiography 53
B. JRCERT Responsibilities

1. Administering the Accreditation Review Process

   The JRCERT reviews educational programs to assess compliance with the Standards for an Accredited Educational Program in Radiography.

   The accreditation process includes a site visit.

   Before the JRCERT takes accreditation action, the program being reviewed must respond to the report of findings.

   The JRCERT is responsible for recognition of clinical settings.

2. Accreditation Actions

   Consistent with JRCERT policy, the JRCERT defines the following as accreditation actions:

   Accreditation, Probationary Accreditation, Administrative Probationary Accreditation, Withholding Accreditation, and Withdrawal of Accreditation (Voluntary and Involuntary).

   For more information regarding these actions, refer to JRCERT Policy 10.200.

   A program or sponsoring institution may, at any time prior to the final accreditation action, withdraw its request for initial or continuing accreditation.

   Educators may wish to contact the following organizations for additional information and materials:

   Accreditation: Joint Review Committee on Education in Radiologic Technology
   20 North Wacker Drive, Suite 2850
   Chicago, IL 60606-3182
   (312) 704-5300
   www.jrcert.org

   Curriculum: American Society of Radiologic Technologists
   15000 Central Avenue, S.E.
   Albuquerque, NM 87123-3909
   (505) 298-4500
   www.asrt.org

   Certification: American Registry of Radiologic Technologists
   1255 Northland Drive
   St. Paul, MN 55120-1155
   (651) 687-0048
   www.arrt.org

Radiography 54
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JRCERT
20 North Wacker Drive
Suite 2850
Chicago, IL 60606-3182
(312) 704-5300
(312) 704-5304 (fax)
mail@jrcert.org (e-mail)
www.jrcert.org

JRCERT
Excellence in Education
## COURSE SEQUENCE SHEET

**Curriculum**: Radiologic Technology  
**Curriculum Code Designation**: AHTAASRAD  
**Effective**: 2018-51

### SSC 100 is a prerequisite for all developmental and 100 level courses.

<table>
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<th>COURSE NUMBER AND TITLE</th>
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Name:  
ID#:  
Matriculation Date:  

Date
APPENDIX C
The student will:

A. Observe in each of the three imaging areas for an 8 hour shift during the fall and an 8 hour shift during the spring semester (RAD 260 & 261).

B. Describe the basic means of image acquisition for each imaging area.

C. Name at least one common exam performed in each imaging area.

D. Report the following for at least one exam in each area:

1. MRI:
   a. Procedure:
   b. Date of procedure:
   c. Reason for study:
   d. Protocol for study:
   e. Patient preparation:
   f. Type, dosage and route of contrast material (if applicable):
   g. Purpose for using contrast (if applicable):

2. US:
   a. Procedure:
   b. Date of procedure:
   c. Reason for study:
   d. Protocol for study:
   e. Patient preparation:

3. NM:
   a. Procedure:
   b. Date of procedure:
   c. Reason for study:
   d. Protocol for study:
   e. Patient preparation:
   f. Type, dosage and route of radioisotope injection:
   g. Purpose for using radioisotope:
Evaluation Criteria / Policies:

1. In order to achieve the maximum benefit from the special imaging areas rotations, the student is responsible for actively participating/observing in the clinical experience and completing objectives.

2. Students will demonstrate proficiency on these objectives by submitting completed objectives to the Clinical Coordinator.

May 2009, June 2017
Basic Principles of Computed Tomography Objectives

The student will:

A. List and briefly describe the Computed Tomography Generations.

B. List and describe the components of the CT imaging system.

C. List the CT computer data processing steps.

D. Explain the difference between reconstructing and reformatting an image.

E. Define the following terms:
   1. Algorithm
   2. Raw Data
   3. Image Data

F. Describe the application of the following terms to CT:
   1. Pixel
   2. Matrix
   3. Voxel
   4. Linear attenuation coefficient
   5. CT/Hounsfield number
   6. Partial volume averaging
   7. Window width (ww) and window level (wl)
   8. Spatial resolution
   9. Contrast resolution
   10. Noise
   11. Annotation
   12. Region of interest (ROI)
   13. Standard vs. volumetric data acquisition

G. Name the common controls found on CT operator consoles and describe how and why each is used.

H. Identify the types and appearance of artifacts most commonly affecting CT images.

I. List and describe current data storage techniques used in CT.

J. Name the radiation protection devices that can be used to reduce patient dose in CT and describe the correct application of each.
K. Observe the following exams and report the items listed.

1. **CT Head:**
   a. Date of procedure:
   b. Reason for study:
   c. Protocol for study:
   d. Patient preparation:
   e. Type, dosage and route of contrast material:
   f. Purpose for using contrast:

2. **CT Thorax:**
   a. Date of procedure:
   b. Reason for study:
   c. Protocol for study:
   d. Patient preparation:
   e. Type, dosage and route of contrast material:
   f. Purpose for using contrast:

3. **CT Abdomen:**
   a. Date of procedure:
   b. Reason for study:
   c. Protocol for study:
   d. Patient preparation:
   e. Type, dosage and route of contrast material:
   f. Purpose for using contrast:

**Evaluation Criteria / Policies:**

A. In order to achieve the maximum benefit from the computed tomography rotation, the student is responsible for actively participating/observing in the clinical experience and completing objectives.

B. Students will demonstrate proficiency on these objectives by submitting completed objectives to the Clinical Coordinator.

February 2008/May 2009
APPENDIX D
The student will:

1. Develop teamwork skills by assisting staff with smooth operations during the evening hours.
2. Demonstrate independent judgment such as prioritizing radiographic examinations, and modifying procedures due to patient condition.
3. Demonstrate knowledge of the flow of radiographic procedures that differ during evening assignments.
4. Exhibit versatility in technical capabilities by performing a variety of radiographic examinations under direct or indirect supervision in accordance with progress in competency program.
5. Participate in the performance of examinations on ER/Trauma patients. (Trauma Codes - with direct supervision).
6. Participate in the performance of routine radiographic examinations on non-trauma patients.
7. Exhibit speed, as well as, accuracy in the performance of radiographic examinations commiserate with experience.
8. Report to clinic appropriately equipped and attired as defined by the student handbook.
9. Participate in evening hour assignment from start of shift to completion of shift.

Evaluation Criteria / Policies:

1. In order to achieve the maximum benefit from the evening shift rotation, the student is responsible for actively participating in the clinical experience and completing objectives.
2. Students will demonstrate proficiency on these performance objectives by submitting a completed evaluation rubric to the Clinical Coordinator that has been signed by the supervising technologist during the evening rotation.
APPENDIX E
**CLINICAL COMPETENCY EVALUATION**

**Radiologic Technology Program**

**Delaware Technical Community College – Owens Campus**

Student: __________________ Signature: __________________

Evaluator: _______________ Signature: _______________

Procedure: _______________ Grade: _______________

Patient / Exam Number: _______________ Date: _______________

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<tr>
<td>2. Appropriately utilizes AIDET (acknowledge, introduce, duration, explanation, thank you)</td>
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<tr>
<td>3. Provides appropriate image receptors, positioning aids, etc.</td>
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<td>4. Prepares appropriate contrast media</td>
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<td>5. Has patient properly gowned (removes appropriate articles of clothing, etc.)</td>
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<td>6. Assists patient in a safe manner</td>
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<td>7. Assesses patient condition and takes appropriate action</td>
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<td>8. Assists physician and/or technologist as needed (vital signs, administration of contrast, etc.)</td>
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<td>9. Communicates appropriately with the patient</td>
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<td>10. Completed in a timely manner expected at his or her level</td>
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<td>3. Selects appropriate image receptor / FOV and places properly</td>
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<td>4. Follows department protocol for the exam</td>
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<td>5. Positions the patient properly</td>
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<td>6. Properly aligns the tube, part, and IR</td>
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<td>7. Gives appropriate breathing instruction</td>
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<td>8. Performs proper hand hygiene</td>
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<td>3. Asks women of childbearing age about the possibility of pregnancy</td>
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<tr>
<td>1. Satisfactory exposure reference numbers</td>
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<tr>
<td>2. Evidence of appropriate collimation</td>
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<tr>
<td>3. Appropriately utilizes computerized technology to access information</td>
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<td>4. Identifies anatomy necessary for the study</td>
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<tr>
<td>5. L/R marker and student ID clearly identified on images</td>
<td>A / F</td>
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<td>6. Properly orients images</td>
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<tr>
<td>7. Clearly explains procedure</td>
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<tr>
<td>8. Critiques images for overall radiographic quality</td>
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**PEDIATRIC STUDY: YES ___ NO___  TRAUMA STUDY: YES ___ NO___**

Comments: _____________________________
GRADING INSTRUCTIONS:

SCORE EACH OBJECTIVE USING THE EVALUATION CRITERIA BELOW:

2 = MEETS EXPECTATION: Objective is performed accurately without assistance.

0 = NEEDS IMPROVEMENT: Objective was not performed, or performance was unacceptable. Student needed assistance.

ITEMS ARE DIVIDED INTO FOUR CATEGORIES AS FOLLOWS:

A = Preparation: Consider the student’s patient care and ability to manage appropriately.

B = Procedure: Consider the student’s knowledge of the examination as well as his or her performance ability.

C = Radiation Protection: Consider the student’s ability to apply ALARA principles.

D = Image Evaluation: Consider the diagnostic quality of the images and the student’s ability to critique his or her images.

AUTOMATIC POINT DEDUCTIONS: The point values listed below are deducted from the FINAL grade if the following is checked:

_____ 5 pts for one repeat

AUTOMATIC FAILURE: The evaluation should be discontinued and the student given a grade of “0 “ if any of the following are checked:

_____ wrong patient  _____ failure to shield appropriately

_____ more than one repeat  _____ attempted wrong exam or wrong side

_____ patient’s safety is in jeopardy  _____ anatomical markers/student I.D. not visible on all images

_____ incorrectly marked image(s)

SCORING: To obtain the final grade divide the total number of points earned by the total number of points possible (this will change from evaluation to evaluation because not all items will always be applicable) and then make any necessary automatic point deductions. Minimum passing grade is 85%.

All objectives completed under simulated conditions will receive a maximum grade of 85%.

REVOKING A COMPETENCY: If in the opinion of college faculty reviewing a completed competency evaluation form, there are significant deficits, the competency may be revoked.

Effective Fall 2008
Rev. 9/5/08, 7/13/12, 12/10/15, 6/3/16, 12/15/17, 5/29/17
GENERAL GUIDELINES
FOR COMPLETING COMPETENCY EVALUATIONS

Completed Clinical Competency Evaluations are legal documents. The evaluator and student may be held legally responsible for the accuracy of these documents. Also, to maintain the quality of clinical education, patient safety, and continuity of grading, the following guidelines are to be followed.

1. Competency evaluations must be documented in Trajecsys WITHIN 24 HOURS of completion. Competencies submitted after 24 hours will not be accepted.

2. Once an exam has begun as a competency, regardless if the student earns an automatic failure or fails to achieve a grade of 85%, the technologist must submit documentation. It is not acceptable for the evaluator to neglect documenting a competency for any reason.

3. The technologist name that appears as the “Evaluator” must have directly supervised the student during the competency exam.

4. Only ARRT registered technologists that have attended a technologist in-service/program update are permitted to complete the Clinical Competency Evaluations.

5. If a student neglects to perform or complete an essential component of the exam, the deficiency must be reflected in the competency scoring. (i.e. prompting; omission of required projection, overlooking control panel settings, etc.)

6. Student L/R markers and I.D. (Item D5) must be visible on all images.

7. All competency evaluations must include comments on objectives where student “needs improvement”. Evaluators are encouraged to include positive feedback on objectives where student “meets expectations”.

Note: The clinical coordinator is ultimately responsible for final grades of all competencies. Competencies that are reviewed by college faculty that have not been graded in accordance with the grading criteria, will require a grade adjustment. Faculty will discuss grading with the evaluator and counsel the student regarding grade changes. If in the opinion of college faculty the student is not consistently performing exams under indirect supervision once competency is achieved, the competency will be revoked and the student will be required to be reevaluated. If a clinical preceptor reviews competencies and determines that a grade change is warranted or the competency be revoked, the clinical coordinator will be consulted.
Section A: Preparation

A1. PROPERLY INTERPRETS EXAM REQUEST
Student must be able to interpret the requisition to perform the competency in accordance with hospital protocol and patient diagnosis. The student MUST assure that the exam request matches the order requisition.

A2. APPROPRIATELY UTILIZES AIDET (acknowledge, introduce, duration, explanation, and thank you)
The student must incorporate all five components while communicating with the patient.

A3. PROVIDES APPROPRIATE IMAGE RECEPTORS, POSITIONING AIDS, ETC.
All image receptors and positioning aids, if used, must be appropriate for the procedure. The student should receive a “0” if prompted.

A4. PREPARES APPROPRIATE CONTRAST MEDIA
If the study requires the use of contrast media, the student must prepare the media for the exam in accordance with hospital/radiologist protocol.

A5. HAS PATIENT PROPERLY GOWNED
The student should receive a “0” if clothing articles that would create an artifact were not removed for imaging. All articles that would interfere with the exam, create artifacts or affect patient diagnosis must be removed in order for this item to be graded a “2”.

A6. ASSISTS PATIENT IN A SAFE MANNER
Student must assist patient in an appropriate manner. If student does not meet all patient needs, this item should be graded a “0”.

A7. ASSESSES PATIENT CONDITION AND TAKES APPROPRIATE ACTION
Student adapts the procedure to the patient’s condition. For example, if the exam is routinely performed upright but the patient cannot stand, the student must make appropriate modifications to receive a “2”.

A8. ASSISTS PHYSICIAN AND/OR TECHNOLOGIST AS NEEDED (vital signs, administration of contrast, etc.)
The student must be able to anticipate the assistance required during the exam if a physician or radiologist is present to provide efficient patient care and expedite exam/procedure.

A9. COMMUNICATES APPROPRIATELY WITH THE PATIENT
The student must speak clearly in a voice that can be heard and understood by the patient at the patient’s level of cognition and age. For example, communicating patient breathing instructions too fast or slow, speaking inappropriately to the level of knowledge of the patient (pediatrics, adolescents, elderly, etc.), disregarding patient verbal/nonverbal needs, etc. should be graded a “0”.

A10. COMPLETED IN A TIMELY MANNER EXPECTED AT HIS OR HER LEVEL
The student should receive a “0” if the procedure took more time than required, regardless of overall performance and resulting image quality.
Section B: Procedure

B1. SETS UP THE CONTROL PANEL FOR MANUAL / AEC EXPOSURES
The student should receive a “0” if control panel (receptor, AEC detector(s), kVp, mAs, and focal spot) is not set appropriately, or if prompted.

B2. MANIPULATES TUBE, TABLE AND BUCKY LOCKS APPROPRIATELY (CR/DR/MOBILE)
The student should receive a “0” if he/she fails to competently operate equipment.

B3. SELECTS APPROPRIATE IMAGE RECEPTOR / FOV AND PLACES PROPERLY
The student should receive a “0” if the IR / FOV size and/or orientation does not coincide with the structures best demonstrated for the anatomical part.

B4. FOLLOWS DEPARTMENT PROTOCOL FOR THE EXAM
The student should receive a “0” if he/she does not perform all necessary projections or is prompted.

B5. POSITIONS THE PATIENT PROPERLY
The student should receive a “0” if patient positioning is not performed in accordance with Merrill’s. The student is not graded based on individual interpretation.

B6. PROPERLY Aligns THE TUBE, PART AND IMAGE RECEPTOR
The student should receive a “0” if the central ray is not aligned/centered to the anatomical part and IR in accordance with Merrill’s. The student should receive a “0” if the proper SID is not utilized.

B7. GIVES APPROPRIATE BREATHING INSTRUCTION
The student should receive a “0” if breathing instructions are not in accordance with Merrill’s.

B8. PERFORMS PROPER HAND HYGIENE
The student should receive a “0” if he/she does not wash hands or utilize an alcohol based hand sanitizer before and after the procedure.
Section C: Radiation Protection

C1. USES GONADAL SHIELDING WHEN POSSIBLE
The student should receive an “A/F” if the gonads are not shielded when appropriate.

C2. UTILIZES ALARA PRINCIPLES (shields self, time, distance, etc.)
The student should receive a “0” if he/she does not shield self and/or others. The student should receive a “0” if the concepts of distance and time are not utilized when applicable. The student should receive a “0” if staff members are not alerted prior to exposure during mobile exams.

C3. ASKS WOMEN OF CHILDBEARING AGE ABOUT THE POSSIBILITY OF PREGNANCY
The student should receive a “0” if he/she does not question female patient of childbearing age (ages 12 through 55) about the possibility of pregnancy.
Section D: Image / Exam Evaluation

D1. SATISFACTORY EXPOSURE REFERENCE NUMBERS
The student should receive a “0” if the exposure indicators are not within the acceptable range.

D2. EVIDENCE OF APPROPRIATE COLLIMATION
Appropriate collimation (prior to exposure) includes only the anatomy of interest. The student should receive a “0” if the radiation field size is larger than the area of interest.

D3. APPROPRIATELY UTILIZES COMPUTERIZED TECHNOLOGY TO ACCESS INFORMATION
The student should receive a “0” if he/she cannot access information relevant to the exam. This includes using all software and postprocessing functions needed for the exam.

D4. IDENTIFIES ANATOMY NECESSARY FOR THE STUDY
The student should receive a “0” if he/she cannot identify all relevant anatomy.

D5. L/R MARKER AND STUDENT ID CLEARLY IDENTIFIED ON IMAGES
The student should receive an “A/F” if anatomical markers are not visible on all images.

D6. PROPERLY ORIENTS IMAGES
The student should receive a “0” if images are not displayed appropriately.

D7. CLEARLY EXPLAINS PROCEDURE
The student should receive a “0” if he/she is unable to articulate exam details to the technologist. For example, the student must be able to specify degree of patient rotation, purpose for tube angulation, significance of respiration phase, etc.

D8. CRITIQUES IMAGES FOR RADIOGRAPHIC QUALITY
The student should receive a “0” if he/she is unable to determine whether images are acceptable based on evaluation criteria for the exam.
APPENDIX F
# C-ARM COMPETENCY FORM

## CLINICAL COMPETENCY EVALUATION
Radiologic Technology Program
Delaware Technical Community College-Owens Campus

Student: ___________________________ Signature: ___________________________
Evaluator: __________________________ Signature: ___________________________
Procedure: __________________________ Grade: ___________________________
Patient / Exam Number: __________________________ Date: __________________________

<table>
<thead>
<tr>
<th>Preparatory Assessment</th>
<th>0</th>
<th>2</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>1. Properly sets up C-arm.</td>
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<td></td>
<td>2. Properly enters patient and procedure information.</td>
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<td>3. Maneuvers C-arm safely and properly.</td>
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<td></td>
<td>4. Identifies and operates all C-arm locks.</td>
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<table>
<thead>
<tr>
<th>Procedure Assessment</th>
<th>0</th>
<th>2</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>B</td>
<td>1. Maintains a sterile field.</td>
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<td></td>
<td>2. Properly aligns C-arm to part.</td>
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<td>3. Operates C-arm in a timely manner as expected at his/her level.</td>
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<td>4. Ensures operating room personnel are notified before the first exposure.</td>
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<td>5. Communicates appropriately with physician, staff, and technologist</td>
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<td>6. Proper orientation of image as directed by physician.</td>
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<td></td>
<td>7. Uses critical thinking skills to perform procedure</td>
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</table>

<table>
<thead>
<tr>
<th>Radiation Protection</th>
<th>0</th>
<th>2</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>C</td>
<td>1. Wears personnel monitoring device.</td>
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<td></td>
<td>2. Appropriate placement of personnel monitoring device.</td>
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<td></td>
<td>3. Wears lead apron throughout exam.</td>
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<table>
<thead>
<tr>
<th>Image Evaluation and Completion</th>
<th>0</th>
<th>2</th>
<th>N/A</th>
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<tbody>
<tr>
<td>D</td>
<td>1. Manipulates image density, contrast and detail.</td>
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<td></td>
<td>2. Accesses stored images / exams.</td>
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<td>3. Utilizes DICOM and sends images to PACS.</td>
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<td></td>
<td>4. Identifies necessary anatomy.</td>
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<td></td>
<td>5. Annotates images appropriately.</td>
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<td></td>
<td>6. Properly cleans C-arm equipment after procedure.</td>
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</tbody>
</table>

**Tech Comments:**

____________________________________________________________________________________________________________
____________________________________________________________________________________________________________
____________________________________________________________________________________________________________

**Affective Skills**

**Student Evaluation**

| 1. Student feels competent with performing study independently. | Yes | No |
| 2. Student exhibits confidence with performing study. | | |
| 3. Student accepts responsibility for performing study independently in the future. | | |
| 4. Student can identify weaknesses and/or strengths with performing study. | | |
| 5. Student can create a plan of improvement for future studies. | | |

**Student Comments:**

____________________________________________________________________________________________________________

January 2007; March 2011, January 2016
APPENDIX G
COURSE DESCRIPTIONS

RAD105
This course introduces the fundamentals of radiologic science and its relation to healthcare. The radiographer’s role in providing patient care to all patient populations is examined. Medical ethics and law are discussed.

RAD130
This course provides the student with the knowledge and skill necessary to perform standard radiographic procedures of the chest, abdomen, upper extremity, lower extremity, shoulder girdle and pelvic girdle, as well as identification of the anatomy demonstrated. Energized laboratory experience supports the lecture portion of this course.

RAD131
This course provides the student with the knowledge and skill necessary to perform standard radiographic procedures of the bony thorax, vertebral column, urinary, biliary, and gastrointestinal systems, as well as, identification of the anatomy demonstrated. Mobile, surgical, and trauma radiography are discussed. Energized laboratory experience supports the lecture portion of this course.

RAD140
This course provides the student with an overview of radiographic principles that include radiographic physics, x-ray production, interactions with matter, and scatter radiation control relative to basic imaging.

RAD141
This course provides the student with an in-depth knowledge of radiographic principles that include image quality factors, anatomic/pathologic variances, exposure systems, and image acquisition methods.

RAD150
This course provides the student with an overview of the principles of radiation protection for the radiographer, patients, other personnel, and the public. Radiation effects on biological molecules and organisms and factors affecting biological response are also presented.

RAD160
This clinical course, the first in a series, provides the student with exposure to the practice of radiography and takes place in various diagnostic imaging departments. The student develops and refines skills in patient management, equipment manipulation, positioning, technical factors selection, and image evaluation.
RAD161
This clinical course, the second in a series, provides the student with exposure to the practice of radiography and takes place in various diagnostic imaging departments. The student develops and refines skills in patient management, equipment manipulation, positioning, technical factors selection, and image evaluation.

RAD162
This clinical course continues to provide the student with exposure to the practice of radiography and takes place in various diagnostic imaging departments. The student develops and refines skills in patient management, equipment manipulation, positioning, technical factors selection, and image evaluation.

RAD222
This course is a review of program content in preparation for the American Registry for Radiologic Technologists (A.R.R.T) examination. The student will focus on content areas that are relevant to the registry and identify areas where remediation may be necessary.

RAD240
This course provides the student with knowledge of equipment and operating principles for radiographic, fluoroscopic, and mobile imaging. Skills in digital image acquisition and processing are enhanced. Digital image display, quality control, and quality assurance are also discussed.

RAD250
This course provides the student with an introduction to the concepts of disease. Pathology, as it relates to various radiographic procedures, is discussed.

RAD260
This clinical course continues to provide the student with exposure to the practice of radiography and takes place in various diagnostic imaging departments. The student develops and refines skills in patient management, equipment manipulation, positioning, technical factors selection, and image evaluation.

RAD261
This clinical course, the final in a series, provides the student with exposure to the practice of radiography and takes place in various diagnostic imaging departments. The student develops and refines skills in patient management, equipment manipulation, positioning, technical factors selection, and image evaluation.
APPENDIX H
**RADIOGRAPHY CLINICAL COMPETENCY REQUIREMENTS**  
Radiologic Technology Program, Owens Campus

*Students must demonstrate competency in all 37 MANDATORY procedures and at least 15 of the 34 ELECTIVE procedures.*  
*Students must select 1 elective procedure from the head section.*  
* Students must select either upper GI or Contrast Enema plus 1 other elective from the fluoroscopy section.*  
*Simulations are reserved for RAD261 Clinical Radiography V.*

Demonstration of competence must include patient identity verification, exam order verification, patient assessment, room preparation, patient management, equipment operation, technique selection, patient positioning, radiation safety, image processing, and image evaluation.

<table>
<thead>
<tr>
<th>Imaging Procedure</th>
<th>Mandatory or Elective</th>
<th>Date Completed</th>
<th>Patient or Simulated</th>
<th>Competency Grade</th>
<th># of Attempts</th>
<th>Competence Verified By</th>
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<tbody>
<tr>
<td>Chest and Thorax</td>
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<tr>
<td>Chest Routine</td>
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<tr>
<td>Chest AP (wheelchair or stretcher) to include lateral</td>
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<td>Ribs</td>
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<tr>
<td>Chest Lateral Decubitus</td>
<td>E</td>
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<td>Sternum</td>
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<tr>
<td>Upper Airway (Soft-Tissue Neck)</td>
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<td>Upper Extremity</td>
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<td>Thumb or Finger</td>
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<td>Hand</td>
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<td>Wrist</td>
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<td>Humerus</td>
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<td>Shoulder</td>
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<tr>
<td>Trauma: Shoulder or Humerus (Scapular Y, Transthoracic or Axial)*</td>
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<tr>
<td>Clavicle</td>
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<td>Scapula</td>
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<td>AC Joints</td>
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<tr>
<td>Trauma: Upper Extremity (Nonshoulder)*</td>
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<td>Lower Extremity</td>
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<td>Foot</td>
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<td>Ankle</td>
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<td>Knee</td>
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<td>Tibia-Fibula</td>
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<td>Femur</td>
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<tr>
<td>Trauma: Lower Extremity *</td>
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<tr>
<td>Patella</td>
<td>E</td>
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<tr>
<td>Calcaneus (Os Calcis)</td>
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<td>Toes</td>
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<tr>
<td>Imaging Procedure</td>
<td>Mandatory or Elective</td>
<td>Date Completed</td>
<td>Patient or Simulated</td>
<td>Competency Grade</td>
<td># of Attempts</td>
<td>Competence Verified By</td>
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<tr>
<td><strong>Head - Students must select at least one elective procedure from this section.</strong></td>
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<tr>
<td>Skull</td>
<td>E</td>
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<tr>
<td>Paranasal Sinuses</td>
<td>E</td>
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<tr>
<td>Facial Bones</td>
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<td>Orbits</td>
<td>E</td>
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<tr>
<td>Zygomatic Arches</td>
<td>E</td>
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<tr>
<td>Nasal Bones</td>
<td>E</td>
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<tr>
<td>Mandible</td>
<td>E</td>
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<tr>
<td>Temporomandibular Joints</td>
<td>E</td>
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<tr>
<td><strong>Spine and Pelvis</strong></td>
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<tr>
<td>Cervical Spine</td>
<td>M</td>
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<tr>
<td>Thoracic Spine</td>
<td>M</td>
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<tr>
<td>Lumbosacral Spine</td>
<td>M</td>
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<tr>
<td>Cross-Table (Horizontal Beam) Lateral Spine</td>
<td>M</td>
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<tr>
<td>Pelvis</td>
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<tr>
<td>Hip</td>
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<tr>
<td>Cross Table (Horizontal Beam) Lateral Hip</td>
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<tr>
<td>Sacrum and/or Coccyx</td>
<td>E</td>
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<tr>
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<td>E</td>
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<tr>
<td>Sacroiliac Joints</td>
<td>E</td>
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<tr>
<td><strong>Abdomen</strong></td>
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<tr>
<td>Abdomen Supine (KUB)</td>
<td>M</td>
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<tr>
<td>Abdomen Upright</td>
<td>M</td>
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<tr>
<td>Abdomen Decubitus</td>
<td>E</td>
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<tr>
<td>Intravenous Urography</td>
<td>E</td>
<td></td>
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<tr>
<td><strong>Fluoroscopy Studies - Students must select either Upper GI or Contrast Enema plus one other elective procedure from this section.</strong></td>
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<td>Upper GI Series (Single or Double Contrast)</td>
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<tr>
<td>Esophagus</td>
<td>E</td>
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<tr>
<td>Cystography/Cystourethrography</td>
<td>E</td>
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<td>ERCP</td>
<td>E</td>
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<tr>
<td>Myelography</td>
<td>E</td>
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<td>Arthrography</td>
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<tr>
<td>Hysterosalpingography</td>
<td>E</td>
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<tr>
<td>Imaging Procedure</td>
<td>Mandatory or Elective</td>
<td>Date Completed</td>
<td>Patient or Simulated</td>
<td>Competency Grade</td>
<td># of Attempts</td>
<td>Competence Verified By</td>
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<tr>
<td>Mobile C-Arm Studies</td>
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<tr>
<td>C-Arm Procedure (Requiring Manipulation to obtain more than one projection)</td>
<td>M</td>
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<tr>
<td>Surgical C-Arm Procedure (Requiring Manipulation around a sterile field)</td>
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<tr>
<td>Mobile Radiographic Studies</td>
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<tr>
<td>Chest</td>
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<tr>
<td>Abdomen</td>
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<tr>
<td>Orthopedic</td>
<td>M</td>
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<tr>
<td>Pediatric Patient (age 6 or younger)</td>
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<tr>
<td>Chest Routine</td>
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<tr>
<td>Upper Extremity</td>
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<tr>
<td>Lower Extremity</td>
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<td>Abdomen</td>
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<tr>
<td>Mobile Study</td>
<td>E</td>
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<tr>
<td>Geriatric Patient (Physically or Cognitively Impaired as a result of aging; age 75 or older)</td>
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<tr>
<td>Chest Routine</td>
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<td>Upper Extremity</td>
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<tr>
<td>Lower Extremity</td>
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</table>

* Trauma is considered a serious injury or shock to the body. Modifications may include variation in positioning, minimal movement of the body part, etc.

Note: The ARRT requirements specify that certain clinical procedures may be simulated. Simulations must meet the following criteria: (a) the student is required to competently demonstrate skills as similar as circumstances permit to the cognitive, psychomotor, and affective skills required in the clinical setting; (b) the program director is confident that the skills required to competently perform the simulated procedure will transfer to the clinical setting; and, if applicable, the student must evaluate related images. Examples of acceptable simulation include: demonstrating CPR on a mannequin; positioning a fellow student for a projection without actually activating the x-ray beam, and performing venipuncture by demonstrating aseptic technique on another person, but then inserting the needle into an artificial forearm or suitable device.
**General Patient Care**

*Requirement:* Candidates must demonstrate competence in all six patient care activities listed below. The activities should be performed on patients; however, simulation is acceptable (see endnote) if state or institutional regulations prohibit candidates from performing the procedures on patients.

<table>
<thead>
<tr>
<th>General Patient Care</th>
<th>Date Completed</th>
<th>Verified By</th>
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<tbody>
<tr>
<td>CPR Certified</td>
<td></td>
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<tr>
<td>Vital Signs (blood pressure, temperature, pulse, respiration, pulse oximetry)</td>
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<tr>
<td>Sterile and medical aseptic technique</td>
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<tr>
<td>Venipuncture</td>
<td></td>
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<tr>
<td>Transfer of patient</td>
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<tr>
<td>Care of patient medical equipment (e.g., oxygen tank, IV tubing)</td>
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</table>

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<thead>
<tr>
<th>Special Imaging Areas</th>
<th>Date</th>
<th>Objectives completed</th>
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</thead>
<tbody>
<tr>
<td>CT (Fall - RAD 260)</td>
<td></td>
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<tr>
<td>CT (Fall - RAD 260)</td>
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<td>CT (Fall - RAD 260)</td>
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<td>CT (Spring - RAD 261)</td>
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<td>CT (Spring - RAD 261)</td>
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<td>CT (Spring - RAD 261)</td>
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<tr>
<td>NM</td>
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<tr>
<td>MRI</td>
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<tr>
<td>US</td>
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<table>
<thead>
<tr>
<th>Evening Rotation</th>
<th>Date</th>
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<tbody>
<tr>
<td>RAD 260</td>
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<tr>
<td>RAD 261</td>
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</table>
Students are required to successfully achieve the minimum number of competency exams each semester as outlined below. Students that fail to meet the required number of competencies by the end of each semester, may not progress to the next clinical course. A maximum number of competencies has also been established for each semester.

The exams listed under each clinical course starting with RAD161 are suggested competencies that the student should be completing. The student is responsible for actively seeking opportunities for completing practices/competencies as outlined.

**RAD 160 – Fall (41 Practice Exams)**
- Chest Routine (15) (minimum of 2 must be AP WC/stretch to include lateral)
- Mobile Chest (10)
- Abdomen Supine (KUB) (3)
- Abdomen Upright/Decub (3)
- Upper Extremities (5)
- Lower Extremities (5)

**RAD 161 – Spring (min 12/max 15)**
- Chest Routine
- Mobile Chest
- Abdomen Supine (KUB)
- Abdomen Upright
- Extremities
- Pelvis/Hip

**RAD 162 – Summer (min 22/max 25)**
- Extremities
- Pelvis/Hip
- Chest Routine Pediatric
- Spine
- Mobile Orthopedic
- Mobile Abdomen
  - Surgical
  - Fluoroscopy electives

**RAD 260 – Fall (min 12/ max 15)**
- Chest with pigg-o-stat
- Ribs
- Surgical
- Head *elective*

**RAD 261 – Spring**
Refine skills, and complete all remaining competencies: mandatory and electives. Failure to complete all ARRT clinical competency requirements by the end of RAD261 will delay completion of the program and graduation.
APPENDIX I
The MR system has a very strong magnetic field that may be hazardous to individuals entering the MR environment or MR system room if they have certain metallic, electronic, magnetic, or mechanical implants, devices, or objects. Therefore, all individuals are required to fill out this form BEFORE entering the MR environment or MR system room. Be advised, the MR system magnet is ALWAYS on.

*NOTE: If you are a patient preparing to undergo an MR examination, you are required to fill out a different form.

Date ______/______/______ Name ___________________________ Last Name ___________ First Name ___________ Middle Initial ___________ Age ______

Address ___________________________ Telephone (home) (_______) ________-

City ___________________________ Telephone (work) (_______) ________-

State ___________ Zip Code ___________

1. Have you had prior surgery or an operation (e.g., arthroscopy, endoscopy, etc.) of any kind? ☐ No ☐ Yes
   If yes, please indicate date and type of surgery: Date ______/______/______ Type of surgery ___________________________

2. Have you had an injury to the eye involving a metallic object (e.g., metallic slivers, foreign body)? ☐ No ☐ Yes
   If yes, please describe:

3. Have you ever been injured by a metallic object or foreign body (e.g., BB, bullet, shrapnel, etc.)? ☐ No ☐ Yes
   If yes, please describe:

4. Are you pregnant or suspect that you are pregnant? ☐ No ☐ Yes

WARNING: Certain implants, devices, or objects may be hazardous to you in the MR environment or MR system room. Do not enter the MR environment or MR system room if you have any question or concern regarding an implant, device, or object.

Please indicate if you have any of the following:

☐ Yes ☐ No Aneurysm clip(s)
☐ Yes ☐ No Cardiac pacemaker
☐ Yes ☐ No Implanted cardioverter defibrillator (ICD)
☐ Yes ☐ No Electronic implant or device
☐ Yes ☐ No Magnetically-activated implant or device
☐ Yes ☐ No Neurostimulation system
☐ Yes ☐ No Spinal cord stimulation system
☐ Yes ☐ No Cochlear implant or implanted hearing aid
☐ Yes ☐ No Insulin or infusion pump
☐ Yes ☐ No Implanted drug infusion device
☐ Yes ☐ No Any type of prosthesis or implant
☐ Yes ☐ No Artificial or prosthetic limb
☐ Yes ☐ No Any metallic fragment or foreign body
☐ Yes ☐ No Are you going into the MRI system room?
☐ Yes ☐ No Any external or internal metallic object
☐ Yes ☐ No Hearing aid
   (Remove before entering the MR system room)

☐ Yes ☐ No Other implant ___________________________

I attest that the above information is correct to the best of my knowledge. I have read and understand the entire contents of this form and have had the opportunity to ask questions regarding the information on this form.

Signature of Person Completing Form: ___________________________ Date ______/______/______

Form Information Reviewed By: ___________________________ Signature ___________________________

☐ MRI Technologist ☐ Radiologist ☐ Other ___________________________

64
Code of Ethics

The Code of Ethics forms the first part of the Standards of Ethics. The Code of Ethics shall serve as a guide by which Certificate Holders and Candidates may evaluate their professional conduct as it relates to patients, healthcare consumers, employers, colleagues, and other members of the healthcare team. The Code of Ethics is intended to assist Certificate Holders and Candidates in maintaining a high level of ethical conduct and in providing for the protection, safety, and comfort of patients. The Code of Ethics is aspirational.

1. The radiologic technologist acts in a professional manner; responds to patient needs, and supports colleagues and associates in providing quality patient care.

2. The radiologic technologist acts to advance the principal objective of the profession to provide services to humanity with full respect for the dignity of mankind.

3. The radiologic technologist delivers patient care and service unrestricted by the concerns of personal attributes or the nature of the disease or illness, and without discrimination on the basis of race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, familial status, disability, sexual orientation, gender identity, veteran status, age, or any other legally protected basis.

4. The radiologic technologist practices technology founded upon theoretical knowledge and concepts, uses equipment and accessories consistent with the purposes for which they were designed, and employs procedures and techniques appropriately.

5. The radiologic technologist assesses situations; exercises care, discretion, and judgment; assumes responsibility for professional decisions; and acts in the best interest of the patient.

6. The radiologic technologist acts as an agent through observation and communication to obtain pertinent information for the physician to aid in the diagnosis and treatment of the patient and recognizes that interpretation and diagnosis are outside the scope of practice for the profession.

7. The radiologic technologist uses equipment and accessories, employs techniques and procedures, performs services in accordance with an accepted standard of practice, and demonstrates expertise in minimizing radiation exposure to the patient, self, and other members of the healthcare team.

8. The radiologic technologist practices ethical conduct appropriate to the profession and protects the patient’s right to quality radiologic technology care.

9. The radiologic technologist respects confidences entrusted in the course of professional practice, respects the patient’s right to privacy, and reveals confidential information only as required by law or to protect the welfare of the individual or the community.

10. The radiologic technologist continually strives to improve knowledge and skills by participating in continuing education and professional activities, sharing knowledge with colleagues, and investigating new aspects of professional practice.

11. The radiologic technologist refrains from the use of illegal drugs and/or any legally controlled substances which result in impairment of professional judgment and/or ability to practice radiologic technology with reasonable skill and safety to patients.
# List of Textbooks

<table>
<thead>
<tr>
<th>Course</th>
<th>Required Textbooks</th>
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</table>
| RAD 130  | Radiographic Procedures I  
Merrills Atlas of Radiographic Positioning & Procedures by Long, Rollins, & Smith; Volumes 1, 2, and 3  
Radiographic Anatomy, Positioning & Procedures Workbook by Hayes |
| RAD 140  | Principles of Radiographic Imaging I  
Radiographic Imaging & Exposure by Terri Fauber  
Principles of Radiographic Imaging “An Art and A Science” by Richard Carlton and Arlene Adler |
| RAD 160  | Clinical Radiography I  
Same Requirement as RAD 130  
Student Handbook, Owens Campus |
| RAD 105  | Intro to Patient Care & Radiography  
Patient Care in Radiography with an Introduction to Medical Imaging by Daly, Ehrlich and McCloskey |
| RAD 131  | Radiographic Procedures II  
Same Requirement as RAD 130 |
| RAD 141  | Principles of Radiographic Imaging II  
Same Requirement as RAD 140 |
| RAD 150  | Radiation Protection & Biology  
Radiation Protection in Medical Radiography by Visconti and Ritenour |
| RAD 161  | Clinical Radiography II  
Same Requirement as RAD 130 |
| RAD 162  | Clinical Radiography III  
Same Requirement as RAD 130 |
| RAD 230  | Radiographic Procedures III  
Same Requirement as RAD 130 |
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Required Textbooks</th>
</tr>
</thead>
</table>
| RAD 240     | Radiographic Equipment Operation & Quality Control  
Radiographic Imaging & Exposure by Terri Fauber | Principles of Radiographic Imaging “An Art and A Science” by Richard Carlton and Arlene Adler |
| RAD 260     | Clinical Radiography IV                           | Same Requirement as RAD 130                                                       |
| RAD 222     | Selected Topics                                   | Reference all program required textbooks                                           |
| RAD 250     | Radiographic Pathology                             | Radiographic Pathology for Technologists by Mace and Kowalczyk                     |
| RAD 261     | Clinical Radiography V                             | Same Requirement as RAD 130                                                       |

*Recommended textbooks will be announced by individual instructors.*
APPENDIX L
DELAWARE TECHNICAL COMMUNITY COLLEGE
RADIOLOGIC TECHNOLOGY PROGRAM

Organizational Chart

Vice President / Campus Director
Bobbi Barends, Ph.D.

Vice President Academic Affairs
Justina Sapna, M.Ed.

Dean of Instruction
Christy Moriarty, M.Ed.

Program Director
Kristie Bentley, M.Ed., RT(R)(CV)

Didactic Instructor
Morgan Jones, M.A., RT(R)(M)

Clinical Coordinator
Terri Hitchens, M.Ed., RT(R)

Clinical Preceptors

Clinical Staff
August 21, 2020

Copyright materials and any Delaware Technical Community College documents have been included in this Handbook at no charge.

All policies and documents included in this handbook are reviewed and revised with each new addition. Revisions that are made throughout the year are reviewed with all students and staff. Updates are provided to students and staff, as appropriate.

Kristie Bentley
Program Director
The contents of this 2020-21 Radiologic Technology Student Handbook have been reviewed with me. I understand the policies and procedures contained within, and the impact policy violations will have on my grade and/or enrollment in the Radiologic Technology program.

Print Name ______________________________

Sign Name ______________________________

Date ______________________________