



RMH

**SCHOOL OF RADIOLOGIC
TECHNOLOGY**

STUDENT HANDBOOK

2012/2013

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SECTION 1

Program Introduction

MANDATORY BACKGROUND CHECK

All students accepted into the program will be subject to a criminal background check at the student's expense. If our criminal background report deviates from your answer on the application (Have you ever been convicted of a felony or misdemeanor other than a minor traffic violation?), the student applicant will be terminated from the program.

ROCKINGHAM MEMORIAL HOSPITAL SCHOOL OF RADIOLOGIC TECHNOLOGY

The (JRCERT) Joint Review Committee on Education in Radiologic Technology is the accrediting agency for Radiography. 20 N. Wacker Drive, Suite 2850, Chicago, IL. 60606-2901. Telephone: 312-704-5300
www.jrcert.org

The School of Radiologic Technology at Rockingham Memorial Hospital has been awarded an 8-year accreditation until 2014.

The RMH School of Radiologic Technology has been certified to operate in the Commonwealth of Virginia by the State Council of Higher Education (SCHEV). 101 N. 14th Street, James Monroe Bldg., Richmond, Va. 23219
Tel: 804-225-2600

This Handbook gives an overview of the program at RMH. The contents of this booklet are subject to change.

PROGRAM ASSESSMENT AND GOVERNANCE

The students' input in the program's governance is extremely valuable. There will be several areas of the program operations that will be evaluated during the students' educational experience. Suggestions for improving the program through assessment surveys, in class or personal discussions and monthly class meetings are welcomed and encouraged.

Students' also help in the decision-making responsibilities by serving as class representatives, by serving on the program's SWOT Committee (Strengths, Weakness, Opportunities, Threats).

MISSION STATEMENT

Radiography is concerned with the art and science of using ionizing radiation as a means of preserving health and diagnosing disease. Thus, radiography performs a vital role in providing optimal health care to the people in the community.

It is the mission of The School of Radiologic Technology at Rockingham Memorial Hospital to provide learning opportunities in a healthcare environment; where the student will become proficient and competent in the use of ionizing radiation as an instrument of diagnosis and treatment of disease. Furthermore, the program will meet the academic needs of the student, assist the student with career planning and development, maintain a high standard of educational instruction, and prepare the graduate for entry-level employment as a radiographer. In addition, the program will give students the foundation to exceed the scope of practice for entry-level radiographers as well as continuing their education in medical imaging.

RADIOGRAPHY PROGRAM GOALS

1. Graduate students will have the educational knowledge and clinical skills that enables them to perform as entry level technologists.
2. Instill in the students the importance of ethical values as a Radiographer and the understanding for professional growth.
3. Graduate students that will apply the necessary patient care skills to communicate effectively with an age-diverse patient population.
4. Graduate students will be able to demonstrate adequate critical thinking and problem solving skills.
5. To graduate students who possess the skill necessary to effectively meet the health care needs of the community.

GENERAL EDUCATIONAL STUDENT LEARNING OUTCOMES

1. To demonstrate a level of effective reading, speaking, writing, and listening skills.
2. To demonstrate mathematical skills.
3. To evaluate and use information technology effectively.
4. Have the means to identify and solve problems, applying knowledge in a critical, ethical, and creative way of thinking.

PROGRAM OUTCOMES

Entry Level Graduate

1. To practice radiation safety principles during procedures.
2. To practice proper patient care skills.
3. To practice professional judgment and ethics.
4. To demonstrate clinical competence.
5. To obtain employment in the field and continue professional skill development and growth.

PROGRAM PERSONNEL

Russell Crank, MS, RT (R), Program Director

Gwen Hinkle, RT(R), Clinical Instructor

Nancy Harold, RT(R), Clinical Instructor

Carla Williams, BS, RT(R) (M), Clinical Coordinator

Rader Dod, BART(R), Clinical Instructor (AMC)

Sue Rose, RT(R), Clinical Instructor (AMC)

Tom Noser, RT(R), Clinical Instructor (PMH)

Dennis Rohrer, MD, Medical Advisor

SUMMER SEMESTER I

Number	Name	Credit
RAD 105	Introduction to Radiology, Protection, & Patient Care	2
BIO 142	Anatomy/Physiology II (BIO 141 must be completed prior)	4
ENG 111	English Composition I	3
HLT 143	Medical Terminology I	<u>3</u>
SEMESTER TOTAL		12

FALL SEMESTER I

Number	Name	Credit
RAD 111	Radiologic Science I	4
RAD 121	Radiographic Procedures I	4
ENG 112	English Composition II	3
SDV 100	Orientation	1
MTH 151	Mathematics for the Liberal Arts I	<u>3</u>
SEMESTER TOTAL		15

SPRING SEMESTER I

Number	Name	Credit
RAD 112	Radiologic Science II	4
RAD 125	Patient Care Procedures	2
RAD 131	Elementary Clinical Procedures I	2
RAD 206	Human Disease and Radiography	2
RAD 221	Radiographic Procedures II	4
PHI 225	Selected Problems in Applied Ethics	<u>3</u>
SEMESTER TOTAL		17

SUMMER SEMESTER II

Number	Name	Credit
RAD 231	Advanced Clinical Procedures I	5
CST 110	Introduction to Speech Communication	3
ITE 119	Information Literacy	<u>3</u>
SEMESTER TOTAL		11

FALL SEMESTER II

Number	Name	Credit
RAD 205	Radiation Protection and Radiobiology	3
RAD 215	Correlated Radiographic Theory	2
RAD 232	Advanced Clinical Procedures II	4
RAD 246	Special Procedures	<u>2</u>
SEMESTER TOTAL		11

SPRING SEMESTER II

Number	Name	Credit
RAD 255	Radiographic Equipment	3
RAD 290	Clinical Practice	4
RAD 99	Radiographic Practice and Seminar	4
RAD 299	Radiographic Research Studies	<u>2</u>
SEMESTER TOTAL		13

TOTAL CREDITS IN PROGRAM**79**

Additional Courses Needed For AAS Degree Completion:

HIS 101/102 or HIS 121/122 (6 credits)

MTH 157 (3 credits)

Humanities (3 credits)

Social Sciences (6 credits)
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COURSE DESCRIPTIONS

- RAD 105** ***Introduction to Radiology, Protection and Patient Care***
Presents brief history of radiologic profession, code of ethics, conduct for radiologic students, and basic fundamentals of radiation protection. Teaches the care and handling of the sick and injured patient in the Radiology Department. Introduces the use of contrast media necessary in the investigation of the internal organs.
- RAD 111** ***Radiologic Science I***
Teaches concepts of radiation, radiography physics, fundamentals of electromagnetic radiation, electricity and magnetism, and application of these principles to radiography. Focuses on X-ray production, emission, and X-ray interaction with matter.
- RAD 112** ***Radiologic Science II***
An introduction to the prime factors of radiographic exposure and its effect on the radiographic image. Discussion of the factors affecting radiographic definition and their influence on radiographic quality. The adjustment of the prime exposure factors and how they effect radiographic quality are presented in classroom discussion and in laboratory demonstration.
- RAD 121** ***Radiographic Procedures I***
Introduces procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton.
- RAD 125** ***Patient Care Procedures***
Presents the care and handling of the sick and injured patient in the Radiology Department. Introduces the fundamentals of nursing procedures, equipment and supplies specific to radiology.
- RAD 131** ***Elementary Clinical Procedures I***
Develops advanced technical skills in fundamental radiographic procedures. Focuses on manipulation of equipment, patient care, osseous studies, skull procedures, and contrast studies. Provides clinical experience in cooperating health agencies.
- RAD 205** ***Radiation Protection and Radiobiology***
Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist.
- RAD 206** ***Human Disease and Radiography***
Introduces the various diseases and anomalies that may be manifested on the radiograph. Presents diseases related to the various body systems. Places emphasis on the relationship of the disease process and radiographic density.
- RAD 215** ***Correlated Radiographic Theory***
Presents intensive correlation of all major radiologic technology subject areas. Studies interrelationships of biology, physics, principles of exposure, radiologic procedures, patient care, and radiation protection.

- RAD 221** ***Radiographic Procedures II***
Continues procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body.
- RAD 231** ***Advanced Clinical Procedures I***
Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies.
- RAD 232** ***Advanced Clinical Procedures II***
Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies.
- RAD 246** ***Special Procedures***
Studies special radiographic and surgical procedures and equipment employed in the more complicated investigation of internal conditions of the human body.
- RAD 255** ***Radiographic Equipment***
Studies principles and operation of general and specialized X-ray equipment.
- RAD 290** ***Clinical Practice***
Provides additional experience in radiographic procedures, demonstrating skills in technical proficiency, radiation protection, and patient care procedures.
- RAD 99** **Review and Seminar**

SCHOOL OF RADIOLOGIC TECHNOLOGY AT ROCKINGHAM MEMORIAL HOSPITAL

Policy regarding the Family Educational Rights and Privacy Act of 1974 (FERPA).

- I. A student at the RMH School of Radiologic Technology has the following rights:
 - A. The right to inspect and review education records covered by the Act.
 - B. The right to challenge (seek correction of) the contents of those records.
 - C. The right to a formal hearing, if necessary, for a fair consideration of such a challenge.
 - D. The right to place an explanatory note in the record in the event that a challenge of the contents is unsuccessful.
 - E. The right to control, with certain exceptions, the disclosure of the contents of the records.
 - F. The right to be informed of the existence and availability of the institutional policy covering the FERPA rights.
 - G. The right to report violations of FERPA legislation to the Department of Education.

- II. The student does not have the right to the following types of information:
 - A. Financial information submitted by parents.
 - B. Confidential letters and recommendations on which a student has waived the right of inspection.
 - C. Any part of a record pertaining to another student.
 - D. Information specifically excluded under the Act's definition of "education records":
 1. Records of an instructional, supervisory, administrative, and educational nature maintained by School officials for their personal use only.
 2. Student employee records.
 3. Student health, psychiatric, and counseling records maintained in connection with treatment of the student.

- III. Procedures for Inspection and Review

A student who wishes to inspect and review his education records may do so by submitting a written request to the Program Director. The Program Director must respond within 14 days of the request by sending the student a copy of the requested records or by arranging an appointment for the student to review the requested records.

- IV. Procedures for Challenging the Contents of an Education Record

The student may challenge the contents of an education record which they consider to be inaccurate, misleading, or otherwise in violation of their privacy rights. The student may initiate a specific challenge by submitting a written request to the Program Director, who shall attempt to resolve the problem through informal discussion. If this procedure does not produce a satisfactory resolution of the problem, the student will be informed of the right to a formal hearing, the procedures to be followed concerning such a hearing, and its composition. The student may request a place and time of the hearing. At the hearing, the student may present evidence of support of his request and may be assisted by an attorney. The decision of the panel at the formal hearing is considered final. However, if the decision of the formal hearing is considered unsatisfactory to the student, he/she may place his own written statement in the education record stating any reason for disagreeing with the decision of the hearing panel.

V. Release of Personal Information in a Student's Education Record

The School may release information contained in a student's record to:

- A. Officials of other institutions to which a student seeks to enroll.
- B. Accrediting agencies.
- C. Persons and organizations providing student financial aid.
- D. Parents of a dependent student as defined by the Internal Revenue Code of 1954.

Section 2

GENERAL INFORMATION FOR STUDENT

GENERAL INFORMATION

ORIENTATION

Orientation is held in spring prior to the start of the program. Attendance is required since much of the material covered is necessary for the student to be allowed to participate in clinical experience at the health facility. It includes orientation to the program and the health facilities. Rules, regulations and policies of each facility, the college and the program are presented.

HOUSING

Each student is responsible for his/her own accommodations.

TEXTBOOKS

- Textbooks are purchased semesterly and yearly by the student.
- Books will be ordered each semester by the faculty through Blue Ridge Community College.
- Students will be notified when the textbooks have arrived.
- A date will be set by the faculty stating when the student is expected to have the required books in class.
- The student is expected to purchase new textbooks. If the student has the opportunity to purchase used textbooks, these must be approved by a faculty member.

FINANCIAL ASSISTANCE

Financial assistance is available to all qualified students through the Financial Aid Office at Blue Ridge Community College for courses taken at BRCC. For further information, refer to your college Student Handbook or contact the Financial Aid Office at BRCC.

HEALTH PHYSICAL/INSURANCE

The student is required to have a physical examination with a current immunization record prior to the first day of clinical education. Each student is highly recommended to show evidence of health care coverage on the physical examination form.

PROFESSIONAL LIABILITY INSURANCE

A major focus of any medical profession must be patient safety. Students are responsible for their own acts, therefore, all students are required to carry liability insurance. This is provided by Rockingham Memorial Hospital.

PROFESSIONAL ORGANIZATIONS (ASRT, VSRT, DISTRICT)

Each student is strongly encouraged to join the available professional organizations. Student membership fees are available. Membership gives the student exposure to the profession and the latest technical advancements, information of continuing education opportunities and employment opportunities nationally as well as locally.

HEALTH INSURANCE, TREATMENT AND SCREENING FOR STUDENTS OF HOSPITAL - BASED SCHOOLS

- A. The following guidelines govern health insurance and injuries for a student enrolled in hospital-sponsored schools (laboratory and radiology).
1. A student is not eligible for worker's compensation coverage. The student that is also a hospital employee should refer to the Hospital's Personnel Policy and Procedure Manual.
 2. The student will not be included in, or eligible to join, the hospital health plan. The student is encouraged to have health insurance coverage on their own or through their parents or spouses. The student will be responsible for the cost for any treatment, evaluation, testing, therapy, care and other services, (excluding the pre-enrollment physical).
- B. The following guidelines apply to pre-enrollment health screening exams:
1. Once tentatively accepted for enrollment, the student will be scheduled for a hospital-paid physical health-screening exam. Physical exams done by private physicians cannot be accepted. Pre-enrollment screening may include, but not be limited to:
 - * Laboratory Work (Rubeolla Titer)
 - * History
 - * Physical
 - * Other services deemed appropriate by the Employee Health Office
 - * Urine Drug Screening

When the findings of the screening exam indicate that (a) a student can perform the essential functions of the educational program, (b) a student can perform the established technical standards, and (c) a student's participation or performance will not jeopardize the health or safety of others, a positive recommendation to the Director of the School will be made. Failure to meet set criteria will result in a negative recommendation.

- C. After the student begins the educational program, he/she will be offered the following benefits:
1. The hospital will offer, at hospital expense, to the student of hospital-sponsored schools the following: flu vaccine, hepatitis B vaccine; and PPD skin test.
- D. Emergency Provision
The student has the choice of being seen in the emergency room by the emergency room physician or by their own physician in the emergency room or office. (The student is responsible for cost of services.)

Technical Standards

Essential Functions and Standards for Successful Performance

To successfully complete the classroom and clinical components of the program, the student in the Radiography program must, either independently **or with reasonable accommodation**, be able to perform all of the following essential standards and functions of a registered Radiographer.

1. **Speech:** Establish interpersonal rapport and communicate verbally and in writing with clients, physicians, peers, family members, and the health care team from a variety of social, emotional, cultural, and intellectual backgrounds.
2. **Hearing: Auditory:** abilities (with corrective devices) sufficient to detect and respond to verbal communication / instruction and acoustic signals on medical devices and equipment from a distance of 6 to 10 feet; use the telephone; function when the use of a surgical mask is required for protection of the patient and/or hospital personnel.
3. **Vision/Reading:** Visual acuity(with corrective lenses) sufficient to identify and distinguish colors; see / read handwritten orders and any other handwritten or printed data such as review orders, requisitions and reports; provide for the safety of clients' condition by clearly viewing monitors and other equipment in order to correctly interpret data; and to evaluate radiographic quality.
4. **Writing:** Ability to organize thoughts and present them clearly and logically in writing either in classroom or clinical setting.
5. **Mobility:** Stand and/or walk for extended amounts of time in laboratory or clinical setting; bend, squat, kneel, lift, move or push heavy equipment (mobile x-ray machine, patient in wheelchair/stretchers/hospital bed, image receptors and x-ray accessories); assist in lifting or moving clients of all age groups and weights; work with arms fully extended overhead; wear required heavy protective lead aprons during some radiographic procedures. Lift up to 50 pounds.
6. **Manual Dexterity:** Demonstrate eye/hand coordination sufficient to manipulate x-ray equipment or hospital equipment; ability to use hands for grasping, pushing, pulling, and fine manipulation; tactile ability sufficient for physical assessment and manipulation of equipment.
7. **Student Conduct:** Students must adhere to the codes of confidentiality; conform to appropriate standards of dress, appearance, language and public behavior; demonstrate professional demeanor and behavior; perform all aspects of work in an ethical manner in relation to peers, faculty, staff and patients; show respect for individuals of different age, ethnic background, religion and/or sexual orientation.

STUDENT RADIATION MONITORING

To help insure that the student is working in a safe environment, the amount of radiation received will be monitored. Radiation film monitoring devices will be issued to each student every month.

It is the responsibility of the student to wear the assigned film monitoring devices at all times while in the clinical setting. The student must use caution as not to lose or damage the monitoring device. The G1 (Total Body) monitoring device is to be worn on the collar near the neck. When wearing a lead apron, it is to be worn on the outside of the apron. The monitoring device will be placed in a holder which must face forward at all times for an accurate reading. At the beginning of each month, the clinical instructor will collect the used monitoring devices and issue new monitoring devices. The readings from the monitoring devices will be recorded in the student's permanent record at RMH and will be reviewed each month by the radiation safety officer. If the radiation level exceeds acceptable limits, the student will be counseled. All monthly recordings are available in the clinical instructor's office for student review.

After graduation, the permanent record of radiation dose will be placed with the departmental administrator. To obtain a copy of these records, the student must request the information to be released.

PREGNANCY POLICY

1. It is the discretion of the student to inform the program director of her pregnancy. If the student chooses not to inform the program director of her pregnancy, then existing and standard radiation protection guidelines shall be followed.
2. If formally informed of the pregnancy, then the program director shall contact the Radiation Safety Officer.
3. A student shall acquire, if not already obtained, a written declaration of pregnancy, which shall include the estimated date of conception. This written declaration shall be signed and dated.
4. An educational pregnancy packet will be given to the declared pregnant student, which includes this pregnancy policy and a copy of Regulatory Guide 8.13, entitled "Prenatal Radiation Exposure."
5. A fetal dosimetry monitoring device will be ordered. The student will wear this monitoring device on her abdomen. She will receive instructions regarding proper use of the monitoring device.
6. An informal conference will be scheduled with the Radiation Safety Officer to review Regulatory Guide 8.13 and she will have the opportunity to discuss any questions or concerns that she may have.
7. After reading Regulatory Guide 8.13, the student has the following options regarding status in the program. She may elect to 1) take up to a 1-year leave of absence from the program. This leave may be extended for an additional year if requested by the student. The student may only receive one extension. After that the student will need to re-apply to the program for admission. The student will be given consideration of courses completed previously. 2) The student may elect to participate in a modified clinical experience, with the understanding that all clinical expectations will need to be completed before the student will be allowed to graduate. 3) The student may elect to participate in the classroom portion only during the pregnancy with the understanding that all clinical requirements must be met to satisfy graduation requirements. 4) The student has the option of withdrawing from the program, or 5) she may continue her course of study and assume any risk that may have been identified by the information provided.
8. If the student declares her pregnancy, she will need to provide a statement from her physician concerning her ability to safely function in the program.

It is both the procedure and practice of this program to offer maximum radiation protection to the student; Rockingham Memorial Hospital will assist both the mother and the fetus to minimize radiation exposure during pregnancy, in accordance with the ALARA concept.

BLS CERTIFICATION

Students are required to obtain basic life support (BLS) certification from the American Heart Association. This training must be in adult, infant, and child CPR plus automatic external defibrillation (AED). Record of certification must be presented to program officials by September 15 of first year in program.

DRESS CODE - CLASSROOM AND CLINICAL:

The student may wear solid black scrub tops and pants. A solid white shirt may be worn under the black scrubs.

- A. A long white lab coat must be purchased for certain rotations.
- B. The uniform is to be kept clean, neat and pressed.
- C. Shoes are to be solid white or black (no mesh) and kept clean and polished. Black and gray logos are acceptable. Consistent with OSHA standards, shoes in patient care areas must be closed toed and no holes on top.
- D. White ankle socks up to malleoli may be worn with white shoes and black socks with black shoes. Ankle socks below malleoli are unacceptable.
- E. Jewelry is to be simple and limited to that which presents no safety hazards for the patient or self. Hazardous jewelry would include dangling necklaces and earrings. Facial and tongue piercing, and excessive (more than 2) ear adornments are not permitted.
- F. Students must not wear fragrances due to the increasing number of allergies.
- G. The student is expected to practice good hygiene. Hair is to be clean and groomed so as not to fall onto a patient or interfere with patient care. Fingernails are to be clean and groomed and nail polish is to be a moderate color. No artificial nails are allowed and fingernails can be no longer than ¼ " in length. Make-up must be professional and must not attract undue attention.
- H. A hair ribbon or bow is to be white or black coordinated with the uniform.
- I. Clothing must cover the torso and undergarments must not be visible. Denim clothing, camouflage, jeans, t-shirts, tank or tube tops, is not permitted.
- J. No visible tattoos.

RMH must ensure a consistent, professional image for our patients and customers. The student is reminded that our patients or visitors may potentially be offended by certain fashion statements; therefore, the faculty reserves the right to determine what is appropriate on a case-by-case basis. A student who does not adhere to the above dress code will be given one warning. With the second incident, the student will be asked to leave the clinical setting and return only when wearing appropriate attire. All missed clinical time will be made up at the discretion of the clinical instructor.

CELL PHONES/BEEPERS

All cell phones/beepers shall be turned off during class/clinical hours to avoid becoming a distraction to the class. The only time cell phones/beepers will be allowed to be turned on is during emergency situations after being cleared with the faculty first.

ATTENDANCE

The two year, 24 month, program consists of 6 consecutive semesters. The sequence begins in the summer of each year. Scheduled college holidays and semester breaks will be observed unless otherwise scheduled to meet designated clinical didactic objectives. The student will be scheduled to no more than 40 hours clinical/didactic instruction per week.

Attendance to all RAD classes is mandatory. Only one section of each RAD course is offered yearly so it is imperative that missed days are kept to a minimum as it is difficult for the student to catch up on the course material. The student is required to call the instructor if they are going to be absent from the class. Attendance to all examinations is required.

Clinical experience attendance is mandatory. The student is required to check in and out for all clinical experiences at all facilities. Each clinical course has a required amount of competencies, which must be met before a clinical grade can be given. Any absences, other than illness or emergency situations, must have prior approval of the faculty. Failure to obtain prior approval may result in disciplinary action being taken.

Any missed assignments are the student's responsibility. Missed assignments must be made up within 2 days or at the discretion of the instructor.

HOURS

A student in the program will be scheduled for up to and not to exceed 40 hours per week in the classroom/clinical setting. This amount of hours will include any courses taken at the community college as well as class work at the institution in the clinical setting. Again, this will not exceed 40 hours per week but the number of hours scheduled at the program in classroom or clinical will be adjusted each semester according to the student's class schedule. General hours for clinical assignments are Monday through Friday 6:30AM – 3:00PM with some evening assignments required.

TARDINESS

A grace period of ten minutes will be allowed before the student is considered late; however, the student is expected to be on time. For those people who do come after ten minutes and are therefore considered late, the following progressive discipline will take place:

- 1st occurrence: Stay after the same day the equivalent amount of time tardy.
- 2nd occurrence: Stay after the same day the equivalent amount of time tardy.
- 3rd occurrence: In writing, describe an action plan that will identify the steps to ensure this will not occur again and make up the equivalent time tardy as designated by the school clinical coordinator(s) and program director.
- 4th occurrence: Make up half a day as designated by the clinical coordinator and program director.
- 5th occurrence: Make up full day as designated by faculty. Student placed on probation and administrative director of department will be notified of action taken.
- 6th occurrence: The student will be suspended for two days at time tardiness occurs. (This will require student to take personal time.)
- 7th occurrence: The student will meet with faculty and administrative director of the department to discuss possible dismissal from the program.

PERSONAL LEAVE TIME

The student is given 50 hours of personal leave time to be used during the twenty-four months of clinical experience. The time can be used for vacation, sick leave, emergencies, or for other approved personal time. Personal leave time is to be scheduled 24 hours in advance, except in the case of an illness or emergency, the student is to contact program personnel as soon as possible. If no one can be reached, a message is to be left on the voice mail of program personnel. A student whose absenteeism due to illness exceeds two consecutive days is required to obtain a written excuse from their primary care physician. The student is required to report any exposures to communicable diseases.

LEAVE OF ABSENCE

Leaves of absence will be handled on an individual basis. Didactic instruction must be completed properly, and all missed clinical experience must be made up.

INJURIES OR ILLNESS

Injuries that require an extended absenteeism will be handled in the same fashion as leave of absence.

FUNERALS

Students will be granted 3 days of excused absence for funerals of their immediate family. The student is responsible for the material presented during the absence.

JURY DUTY

Students can be excused from jury duty until graduation from the program. Contact the program director for the exclusion.

HOLIDAYS (*according to BRCC).

Holidays will be observed. These holidays include (2 days each at): Easter, Independence Day, Labor Day, Thanksgiving Day, Memorial Day, *Christmas, and *New Year's

ADVERSE WEATHER CONDITIONS

The school will cancel or delay clinical and classes when Blue Ridge Community College closes/cancels/delays classes as follows:

BRCC closed – School of Radiologic Technology closed

BRCC delayed– School of Radiologic Technology starts at the same time as BRCC

Trauma Rotations

- BRCC closed evening classes on Monday or Wednesday – School of Radiologic Technology Trauma students off
- BRCC closed on Fridays – School of Radiologic Technology Trauma students can come at their discretion

Trauma rotations missed during the week due to inclement weather:

- If 2 rotations are missed during the week they must be made up on Saturday and Sunday unless inclement weather.
- If only one night is missed, it must be made up on Saturday or Sunday of that weekend unless inclement weather.
- If all three nights are missed due to inclement weather the third night will be made up at the discretion of the faculty.

*Students are not scheduled more than 40 hours per week. If class is missed Monday thru Thursday due to inclement weather, Fridays will be used as a makeup day if necessary. This will be at faculty discretion.

GRADING

Grades in all RAD and science courses must be a “C” or better. The student will be allowed to post only one “D” in any non-RAD course, which requires the student to be placed on probation for the remainder of the program. If the student obtains any grade below a “C” in the remainder of their classes, this will result in the student’s withdrawal from the program. Two “D”s in any non-RAD courses or an “F” in any course at any time will also require the student to withdraw from the program. The student must maintain an overall GPA of 2.5 to remain in the program. (RAD courses are only taught once per year, which eliminates the possibility of retaking the course before the next session begins.)

A GPA below 2.5 will result in a probation period with possible suspension. The GPA must be brought back up to 2.5 by the end of the probation period to remain in the program.

If a student applies for the program and has a “D” in a required BRCC course, the student must repeat the course before they will be accepted into the program.

GRADING SYSTEM

(RAD courses)

A	94-100	Excellent performance
B	86-93	Good performance
C	78-85	Average performance
D	70-77	Unacceptable performance
F	0-69	Failing performance

CHEATING STATEMENT

Cheating will result in an automatic “F” for the course and suspension from the program and school.

PROBATION

Any of the following will constitute a minimum of a six-week probation period:

1. If students RAD GPA is less than 2.5 at Midterm;
2. Overall and/or RAD GPA less than 2.5;
3. Unsatisfactory/unsafe clinical performance. (Refer to “Unsafe Behavior” in Clinical Education); or
4. Second year students who receive unsatisfactory clinical evaluations will be counseled after the 2nd and placed on probation for 6 weeks after the 3rd. Upon receiving a 5th unsatisfactory clinical evaluation the student will be dismissed from the program.

GROUNDS FOR DISMISSAL

The grounds for dismissal are listed below. It should be pointed out that a student can be suspended from the program at any time during their training for violation of any one of the grounds listed either for academic reasons or disciplinary reasons.

1. Failing grades in radiology and/or college courses.
2. Insubordination.
3. The conviction and distribution of, or possession of illegal drugs or controlled substances.
4. Unsatisfactory clinical performance.
5. Unprofessional or unethical conduct.
6. Cheating in related or professional courses.
7. If Rockingham Memorial Hospital refuses to allow a student on hospital property for violations such as theft or misconduct, the student will not be allowed to continue.
8. Calling in sick during normal school hours with the intention to work a job would be considered undesirable behavior. This behavior could lead to dismissal from the program.
9. Failure to follow appropriate radiation protection safety policies.

APPEAL PROCESS/ DUE PROCESS/ PROGRAM GRIEVANCE

The program respects the students' right to grieve or appeal decisions, which may seem unfair. The students will also acknowledge their right to question program conditions through the JRCERT and SCHEV by signing the Grievance and JRCERT/ SCHEV form. The purpose of the student academic appeals process is to provide an informal but structured system of academic review for students who have questions, concerns, and/or serious disagreements concerning academic matters. This procedure is to be used only when a student has an academic concern listed below that cannot be resolved to the student's satisfaction at the faculty level.

Definition:

Academic matters covered under this appeals process include:

1. Unfair, inequitable treatment of students
2. Unfair grading procedures and computations of grades
3. Inappropriate classroom/ personal conduct of instructor
4. Improper disclosure of grades
5. Improper applications or interpretation of academic rules and standards
6. Improper/ unfair testing procedures

Decisions made by the faculty or staff is considered final unless the student files an appeal. When a student believes a decision has been determined incorrectly or a disciplinary action is inappropriate, the student must: (1) file a written report (appeal) with either the instructor or program director, identifying specific reason(s) for the appeal. This appeal must be filed within 5 days of posting of the course grade or notification of a disciplinary action. The program official will have 5 days to reach a decision. (2) If the matter is not resolved to the satisfaction of the student, an appeal may be made to the Administrative Director of Radiology within 5 days. The Administrative Director of Radiology will have 5 days to render a decision on the matter. (3) If this decision is not satisfactory to the student, a final appeal may be made, within a 5-day timeframe, to the Vice President of Clinical and Support Services. A decision by this individual will be made within 5 days. This final appeal is considered to have been made to an entity independent of the program, whose decision will be considered final. No other options of appeal will be offered within the program.

Each level of the appeal and response to the appeal must be in writing within 5 days. Upon agreement to a disciplinary action change, the change will be initiated immediately. No new matter may be appealed at any higher level that was not identified by the student in the initial appeal.

INTERVIEWS - EMPLOYMENT

The student can be excused one day from clinical for employment interviews and will not be required to make up the time.

INTERVIEWS - CONTINUING EDUCATION (SCHOOLS/PROGRAMS)

The student will be excused from clinical to attend two interviews for educational programs and will not be required to make up the missed time providing all graduation competencies are met by the graduation date.

<u>PROGRAM EXPENSES (ESTIMATES)</u>	<u>RMH</u>	<u>BRCC</u>
Tuition and Fees	\$3500/yr = \$7000	See BRCC for fees
Books (2 Years)	\$ 800= \$800	
Uniform Allowance	\$ 250/yr.= \$500	
Supplies (2 years)	\$ 50= \$100	
Mandatory Background Check	\$20 = Current Charge to RMH by VA State Police	
RMH TOTAL	\$8,420	

TUITION PAYMENT

Tuition at RMH for the incoming class will be \$3500 per year payable by June 1st each year. Checks should be made payable to Rockingham Memorial Hospital. Books and uniforms are not included in the annual tuition. Changes to the tuition will be announced by January 1st for new incoming students. Refund of the tuition is available.

TUITION REFUND

If a student withdraws from the program, a refund may be requested. Notice of withdrawal should be submitted in writing to the Program Director of the Radiologic Technology School.

The refund policy is as follows:

- A. A student who enters the school but withdraws or is terminated during the first $\frac{1}{4}$ of the program shall be entitled to a minimum refund amounting to 75% of the cost of the program.
- B. A student who withdraws or is terminated during the second $\frac{1}{4}$ of the program shall be entitled to a minimum refund amounting to 50% of the cost of the program.
- C. A student who withdraws after completing $\frac{3}{4}$ (75%) of the program shall not be entitled to a refund.

A student applicant may cancel by written notice, their enrollment at anytime prior to the first class day of the session for which application was made. When cancellation is requested under these circumstances, the school will refund all tuition paid by student, less a maximum tuition fee of \$100.00. A student applicant will be considered a student the first day of class.

STUDENT SEMINARS

A student wishing to attend a seminar offered on a clinical day will be allowed to go at his or her own expense. If evidence of attendance to the seminar is presented to the program director, the clinical time will not have to be made up.

In the last semester of the program, second year students are required to attend a review seminar. The expense of the seminar is the responsibility of each student.

If necessary, time will be allotted for class-organized fundraising projects to offset the expenses of the review seminar. The projects must be approved by the faculty and meet hospital approval if on hospital grounds. The class will elect a spokesperson and a treasurer. Program personnel will serve as an advisor.

If a student fails to or wishes not to participate with the fund raising projects, the student will remain in the clinical setting and will be allowed to attend the seminar at their own expense.

The mock registry given at seminar is mandatory. Results of the mock registry are to be returned to the program director. Students, who fail to take the mock registry or be at the complete seminar, will make up the missed clinical time.

STUDENT CONFERENCES

Semesterly conferences will be held with each student. The conference may include the student, a clinical instructor and the director. The student may be required to do a self-evaluation prior to the meeting and will receive feedback regarding performance in the clinical and classroom settings. This is an opportunity for the student to discuss any problems or concerns and make comments. Each student is encouraged to discuss questions, ideas, or problems with the program director or clinical instructors at any time not just during conferences.

SEXUAL HARRASSMENT

It is the policy of the School of Radiologic Technology to maintain an educational environment free of sexual harassment, intimidation or exploitation (either physical or verbal). Specifically, it is everyone's responsibility to help create an environment free of sexual coercion and unwanted conduct.

- Any incidence of such conduct shall be reported promptly to program faculty or to the Human Resources Department.
- This policy covers the conduct and behavior of all students, employees and the acts of others.
- All reported incidents will be promptly investigated and disciplinary action will be taken for misconduct.

TRANSFER POLICY

Any student wishing to transfer into the School of Radiologic Technology must formally request in writing the desire to enter the program. The student's transcripts will be evaluated by Blue Ridge Community College to determine the extent of college level course work that may be transferred. The School of Radiologic Technology will also review the potential student's transcript to determine placement within the program. The student will be required to, at the minimum, complete the entire summer II, fall II, and spring II semester rotations and course work to be eligible for graduation. The student must also be transferring from a JRCERT approved program. Students will be evaluated on a case-by-case basis. The program reserves the right to accept or deny transfer students on the basis of the ability to absorb the student into the program without having a negative impact on student, faculty, and staff ratios.

RECORDS AGREEMENT

The School of Radiologic Technology at Rockingham Memorial Hospital does herewith certify that in the event the School of Radiologic Technology should close, student records will be maintained by RMH Imaging Services and will be stored at a RMH Hospital owned facility.

RESOURCES AVAILABLE TO THE STUDENT IN THE RADIOGRAPHY PROGRAM:

Libraries: Harrisonburg Public Library
 James Madison University Library
 Blue Ridge Community College Library
 Eastern Mennonite University Library
 Rockingham Memorial Hospital Medical Library
 Radiography Program Library

Energized Laboratory with various positioning, imaging and exposure aids

Numerous Computer Programs

Video Tapes

Radiographic Film Library

Section 3

CLINICAL EDUCATION

CLINICAL EDUCATION

The purpose of the clinical education in Radiologic Technology is to allow the student to apply theoretical principles of radiography, patient care, and radiographic procedures to practical experience. The clinical phase of the program is designed to reflect and correlate with the classroom and laboratory coursework. The goal of the program is to produce a qualified entry level technologist who is versatile and can adapt to any given situation or environment. The student will have the status of a learner and will not take the place of the staff radiographer.

Students are assigned to the clinical rotation starting in January. If the assigned clinical area is not doing radiographic procedures, the student may assist in other areas in the clinical setting. In the event the student leaves the assigned clinical area, the student must inform the technologist or clinical instructor.

After a procedure is presented in the classroom, it is demonstrated in the laboratory. The student will do a return demonstration followed by a simulation of the procedure. In the clinical setting, the student observes the actual procedure and participates in the procedure under direct supervision. The clinical instructors evaluate the student's clinical competencies. Upon successful completion of a competency evaluation of the procedure, the student is allowed to perform the procedure with indirect supervision.

The importance of well utilized clinical time cannot be stressed enough. It is expected that any low volume time will be used for discussing problems, procedures and cases with the technologist or clinical instructor, practicing simulated radiographic procedures, or completing laboratory requirements for competency-based evaluations.

Periodically the program director, clinical instructor(s), and the student meet to discuss the student's progress in the program both in the classroom and clinical setting. Areas of strength, weaknesses, and ways for improvement are presented. The student is then given the opportunity to voice any problems, concerns, or ideas they may have with themselves or the program. However, since the program has an open door policy, the student is encouraged to approach any program personnel at any time.

In the first year, the student is assigned two days per week to an area, which is currently presented in the classroom. The radiographic procedures taught in the first year include: general radiography, fluoroscopy, IVU's, surgery, and portables. The student is rotated through the previously mentioned areas as well as transport, nursing care, quality assurance, and office procedures.

In the second year, the student continues to rotate three to five days per week through the same radiographic areas in addition to specialized areas of trauma and other medical imaging modalities. The modalities consist of sonography, nuclear medicine, radiation therapy, mammography, MRI, CT, special procedures, and heart catheterization.

Each student is required to keep an accurate record of the examination he/she observes, participates in or performs under indirect supervision.

The student is responsible to help maintain a clean, well-supplied environment, which includes the radiographic rooms, waiting rooms, hallways and office area.

The student is required to follow all institutional and departmental policies, procedures, regulations and rules. Gum chewing, whistling, loud behavior and eating are not allowed in the clinical areas. There are designated areas within the building for eating. Departmental telephones are not to be used for personal calls. Personal calls are to be made during breaks on the available telephones. Cell phones are not allowed in the clinical setting.

While in the clinical setting, the student will be given a 15-minute break and a 30-minute meal break. The time of these breaks is to be approved by the supervising technologist. The meal break may be off the hospital grounds; however, the 15-minute break must be within the institution.

The program director and/or clinical instructors are available to the student daily from 6:00 a.m. to 3:30 p.m. On the trauma rotation, the lead technologist is available to the student. The clinical instructors in cooperation assign clinical rotations with the supervising technologist.

For emergency situations, students have access to faculty home telephone numbers.

SUPERVISION OF STUDENTS IN CLINICAL AREAS

Until the student achieves the required competency in a given area or on a given examination, qualified radiographers will directly supervise all clinical experience.

Direct supervision is:

1. The technologist reviews the request in relationship to the student's achievements and abilities;
2. The technologist evaluates the patient's condition in relation to the student's achievements and abilities;
3. The technologist reviews positioning and technical factors prior to exposure; and
4. The technologist reviews and approves the finished radiographs.

Students shall not take the responsibility or the place of staff technologists. After demonstrating competency, the student may be permitted to perform procedures with indirect supervision. **Repeating of radiographs will be done only in the presence of a qualified technologist. All repeated radiographs are to be documented by the student & initialed by the technologist.**

Indirect supervision is defined as the supervision provided by a qualified radiographer immediately available to assist the student at any level of achievement.

EVENINGS AND NIGHTS

The evening clinical, trauma, will be scheduled as part of the clinical rotation. In the trauma rotation, the student may be assigned to clinical experience from Monday through Friday. The night shift, 11:00 p.m. to 7:00 a.m., will not be incorporated into the clinical schedule. Students are supervised at all times by a Registered Radiologic Technologist. If adverse weather conditions occur, the student should follow the Adverse Weather/Snow Policy.

POSITIONING BOOKS

The small notebook that is purchased for the purpose of writing down examination procedures is required for each student. This is the student's positioning book, so the material within the book should reflect the student's needs and requirements. This book is to be with the student at all times in clinical and MUST be neat, legible and up to date. The instructors will review the book periodically.

UNSAFE BEHAVIOR

Unsafe clinical behavior is demonstrated when the student:

1. Violates and threatens the physical safety of the patient (fails to provide proper restraints or constraints);
2. Violates or threatens the psychological safety of the patient (verbal abuse).
3. Uses incorrect nursing procedures (failure to report an incident/bad judgments repeatedly);
4. Assumes improper independence in action or decisions;
5. Fails to accept moral or legal responsibility for own action, violating professional integrity (covers up own errors; violates patient confidentiality);
6. Fails to follow established safety rules;
7. Violation of any regulations, rules or procedures set by the clinical site; and
8. Violates any part of the "Patient Bill of Rights".
9. Failure to follow ALARA principles in radiation protection.

A student who demonstrates UNSAFE behavior(s) in clinical performance may be asked to leave the clinical setting.

Section 4

CLINICAL GRADING

CLINICAL GRADING

The semester clinical radiography grade will be determined by the following criteria:

Evaluation Tool/

- Professionalism
- Worksheets
- Final test
- CBE's
- Staff evaluations
- Clinical instructors' evaluation

Professionalism - This relates to the student's attitudes, behavior and personal habits. It is a very important part of participation within the health care field.

Worksheets - Clinical objective worksheets given to the student serve a dual purpose of informing the student just exactly what is expected of them and to assure that the student has received all of the necessary information.

Final Examination – See RAD 290 Syllabus

Competency Based Evaluations (CBE's) - The student is required to complete a specific number of CBE's to insure continuous progress in the clinical setting. The clinical instructors will perform laboratory spot check evaluations until graduation. Once a student has completed a CBE on an examination or procedure, the student is allowed to perform that examination or procedure with indirect supervision.

Staff Evaluations - the supervising staff in each area will make an evaluation of the student's performance.

PROCEDURE OBJECTIVES

For routine examinations listed for the Clinical Radiography courses, the student will complete radiographic procedures using the following format:

The student will:

1. List the usual indications for the examination;
2. Describe the anatomy visualized;
3. Describe patient positioning including central ray;
4. Identify the correct size of film, type of film, and whether it is normally performed table top, table Bucky, or upright Bucky;
5. Describe patient preparation if applicable;
6. If applicable, identify the contrast media used, the dosage, method of administration, contraindications, and alternatives;
7. Name possible accessories that may be used;
8. State the technical factors and reasons for using them;
9. Explain possible technical adjustments that may be required;
10. Describe alternatives in positioning to accommodate the patient's inability to be positioned in the normal fashion; and
11. Identify respiratory requirements.

Section 5

CLINICAL OBJECTIVES & EVALUATIONS

CLINICAL PERFORMANCE OBJECTIVES FOR STUDENTS IN RADIOLOGIC TECHNOLOGY

OBJECTIVES: The student will:

1. Use proper oral and written medical communication.
2. Demonstrate knowledge of human structure, function and pathology.
3. Anticipate and provide basic patient care and comfort.
4. Apply principles of body mechanics.
5. Perform basic mathematical functions.
6. Operate radiographic imaging equipment and accessory devices.
7. Position the patient and imaging system in performing radiographic examination procedures.
8. Modify standard positioning and procedures to accommodate for patient condition and other variables.
9. Process radiographs.
10. Determine exposure factors to obtain diagnostic quality radiographs with minimum radiation exposure.
11. Adapt exposure factors for various patient conditions, equipment, accessories and contrast media to maintain appropriate radiographic quality.
12. Practice radiation protection for the patient, self and others.
13. Recognize emergency patient conditions and initiate first aid and basic life-support procedures.
14. Evaluate radiographic images for appropriate positioning and image quality.
15. Evaluate the performance of radiographic systems, know the safe limits of equipment operation, and report malfunctions to the proper authority.
16. Demonstrate knowledge and skills relating to quality assurance.
17. Exercise independent judgment and discretion in the technical performance of medical imaging procedures.
18. Become familiar with reception procedures and the routine schedule of the department.
19. Know the proper order in which multiple procedures on a patient should be performed.
20. Have all radiographs approved by a supervisor or radiologist before the patient is released.

21. Be truthful in matters concerning assignments and relationships with the supervising personnel.
22. Exhibit a professional attitude towards patients and other personnel.
23. Repeat radiographs only with direct supervision.
24. Perform clinical competency based examinations.
25. Evaluate and appropriately handle a variety of adverse patient conditions.
26. Gain experience with multiple trauma procedures.
27. Develop time management skills.
28. Be able to organize the "unscheduled" patient workload giving consideration to patient priorities and procedure time requirements.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY
HARRISONBURG, VIRGINIA**

WORK PERFORMANCE AND ATTITUDE

OBJECTIVES: The student will:

1. Perform all duties and assignments to the best of his ability as directed by his supervisor.
2. Perform procedures taught in the classroom.
3. Repeat radiographs only in the presence of a technologist.
4. Follow all instructions promptly and efficiently.
5. Maintain a courteous attitude toward all the members of the departmental staff.
6. Treat the patient courteously at all times. The patient is to be the main focus at all times and is to be handled gently and carefully.
7. Help to maintain the safety of the entire department.
8. Not smoke, eat, chew gum, or engage in talking and loitering in the clinical setting.
9. Not instruct another student or approve another student's work.
10. Direct any problems or questions concerning any procedure to a supervisor before any radiographs are taken to prevent unnecessary exposures. Provide appropriate radiation protection methods for both patient and practitioner.
11. Perform any task asked of him/her within his ability.
12. Cone or collimate to the cassette size or less for all exposures.
13. Place their identification number on all radiographs.
14. Properly identify required information on all radiographs.
15. Not take reports from the radiologists without approval.

EMERGENCY AND TRAUMA ROTATION

OBJECTIVES: The student will:

1. Have the opportunity to perform procedures in emergency situations and under adverse conditions.
2. Learn to adapt procedures and equipment to obtain radiographs in dealing with universal situations.
3. Provide patient care to emergency victims.
4. Be supervised by other than program personnel.
5. Have the opportunity to gain independence and confidence.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY
HARRISONBURG, VIRGINIA**

SURGICAL OBJECTIVES

OBJECTIVES: The student will:

1. Properly dress for the surgical suite.
2. List five types of surgical procedures requiring radiology.
3. Properly identify the sterile area in the operating room.
4. Identify and give the function of the following in the operating room:
 - a. Surgeon
 - b. Anesthesiologist/anesthetist
 - c. Scrub nurse
 - d. Circulating nurse
5. Prepare the portable machine for surgery.
6. Set up the portable machine for a procedure.
7. Properly set the technical factors on the portable machine for a surgical procedure.
8. Practice proper sterile technique.
9. Operate the C-Arm during a surgical or Pain Clinic procedure.
10. Process films properly.
11. Explain the difference between closed reduction and open reduction.
12. List 3 types of surgical procedures done requiring the C-arm.
13. Properly position patient for a urological procedure including computer set up.
14. Describe the use and purpose of the C-arm in surgical procedures.
15. Give the reason for a sponge search, and explain the mechanics of the procedure.
16. Describe how the breathing of a patient is controlled for an exposure during a surgical procedure.
17. Actively participate in at least three of each of the following surgical procedures:
 - a. Cholecystectomy/cholangiogram/Lap (Chole)
 - b. Hip pinning
 - c. Retrograde urogram
 - d. 5 other types of procedures

**Rockingham Memorial Hospital
School of Radiologic Technology
Clinical Competency Requirements**

The RMH Radiography Program requires students to demonstrate competency in all 37 of the mandatory radiological procedures. 32 of the 37 mandatory procedure competencies must be demonstrated on patients. The remaining 5 procedures may be simulations. The RMH Radiography Program requires the students to demonstrate competency in all 25 of the elective radiological procedures. 15 of the 25 procedures must be demonstrated on patients. The other 10 may be simulated.

Radiologic Procedure	Mandatory or Elective	Date Completed	Patient or Simulated	Competence Verified By	Grade
Chest and Thorax					
Chest Routine	M				
Chest AP (Wheelchair or Stretcher)	M				
Ribs	M				
Chest Lateral Decubitus	E				
SC Joints	E				
Sternum	E				
Upper Extremity					
Thumb	M				
Finger	M				
Hand	M				
Wrist	M				
Navicular	E				
Forearm	M				
Elbow	M				
Humerus	M				
Shoulder (Axillary)	M				
Trauma: Shoulder (Scapular Y, Transthoracic)*	E				
Clavicle	E				
Scapula	E				
AC Joints	E				
Trauma: Upper Extremity (Nonshoulder)*	M				
Lower Extremity					
Foot	M				
Ankle	M				
Knee	M				
Tibia-Fibula	M				
Femur	M				
Trauma: Lower Extremity*	M				
Patella	E				
Calcaneus (Os Calcis)	E				
Toe	M				

Radiologic Procedure	Mandatory or Elective	Date Completed	Patient or Simulated	Competence Verified By	Grade
Cranium					
Skull	E				
Paranasal Sinuses	E				
Facial Bones/Orbits	E				
Nasal Bones	E				
Mandible or Panelipse	E				
Spine and Pelvis					
Cervical Spine/Soft Tissue Neck	M				
Trauma: Cervical Spine (Cross Table Lateral)*	M				
Thoracic Spine	M				
Lumbosacral Spine	M				
Pelvis	M				
Hip	M				
Cross Table Lateral Hip	M				
Sacrum and Coccyx	E				
Scoliosis Series	E				
Sacroiliac Joints	E				
Abdomen					
Abdomen Supine (KUB)	M				
Abdomen Upright	M				
Abdomen Decubitus	E				
Fluoroscopy Studies					
Upper GI Series	E				
Air Contrast / Regular Enema	E				
Small Bowel Series	E				
Esophagus	E				
Surgical Studies					
C-Arm Procedure	M				
C-Arm Procedure	E				
C-Arm Procedure	E				
Portable Studies					
Chest	M				
Abdomen	M				
Orthopedic	M				

Radiologic Procedure	Mandatory or Elective	Date Completed	Patient or Simulated	Competence Verified By	Grade
Pediatrics (age 6 or younger)					
Chest Routine	M				
Upper Extremity	M				
Lower Extremity	M				
Abdomen	M				
Portable Study (Infant Chest Newborn)	M				

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

General Patient Care (The activities should be performed on patients; however, simulation is acceptable if the state or institutional regulations prohibit candidates from performing the procedures on patients.)	Date Completed	Patient or Simulated	Competence Verified By	Grade
CPR / AED				
Vital signs (blood pressure, pulse, respiration, temperature)				
Sterile and aseptic technique				
Venipuncture				
Transfer of patient				
Care of patient medical equipment (e.g. oxygen tank, IV tubing)				

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

NAME: _____ CLASS: _____ YEAR: _____ MONTH: _____

P=PERFORMED SATISFACTORILY/A=ASSISTED/O=OBSERVED

	P	A	O
THORAX			
Routine Chest			
Portable Chest			
Chest Decub			
Ribs			
SC Joints			
Sternum			
ABDOMEN			
KUB			
Portable KUB			
Decub. Abdomen			
Acute Abdominal Series (upright)			
UPPER EXTREMITY			
Finger			
Thumb			
Hand			
Wrist			
Navicular			
Forearm			
Elbow			
Humerus			
Shoulder			
AC Joints			
Clavicle			
Scapula			
LOWER EXTREMITY			
Toe			
Foot			
Ankle			
Os Calcis			
Lower Leg			
Knee			
Patella			
CRANIUM			
C-Spine			
Skull			
Facial Bones / Orbits			
Paranasal Sinuses			
Nasal Bones			
Mandible			
Panelipse / TM Joints			
Zygomatic Arches			
VERTEBRAL COLUMN			
Hip			
Femur			
Pelvis			

	P	A	O
Thoracic Spine			
Lumbar Spine			
Sacrum			
Coccyx			
Sacro-Iliac Joints			
Scoliosis Series			
URINARY SYSTEM			
IVU			
DIGESTIVE SYSTEM			
Ba Swallow			
UGI			
Small Bowel Series			
Barium Enema			
OTHER			
Special Procedures			
Mammogram/Localizations			
CT			
MRI			
Nuclear Medicine			
Radiation Oncology			
Ultrasound			
OR Procedures			
Misc. Portables (orthopedics)			
Heart Cath			
Miscellaneous			
TOTAL:			
Pediatric (6 & Under)			
Geriatric (65 & Over)			

DIRECT AND INDIRECT SUPERVISION

SUPERVISION OF STUDENT IN CLINICAL AREAS

Until the student achieves the required competency in a given area or on a given examination, all clinical experience will be directly supervised by qualified radiographers.

Direct supervision is:

1. A qualified radiographer reviews the request in relationship to the student's achievements and abilities;
2. A qualified radiographer evaluates the patient's condition in relation to the student's achievements, abilities and knowledge;
3. A qualified radiographer is present during the conduct of the examination; and
4. A qualified radiographer reviews and approves the radiographs.

Students shall not take the responsibility or the place of staff technologists. After demonstrating competency, the student may be permitted to perform procedures with indirect supervision.

Indirect supervision is defined as the supervision provided by a qualified radiographer immediately available to assist the student at any level of achievement.

Immediately available is defined as a qualified radiographer is in the department or on the floor/wing and can be summoned immediately for assistance.

Students are not to go on portables or to surgery by themselves nor are they to be left in the radiography department alone.

With indirect supervision, the requisition and patient are to be evaluated by a qualified radiographer. The radiographer makes a decision as to whether the student is capable of doing the exam or procedure with indirect supervision.

Upon completion of the exam or procedure, all radiographs must be reviewed and approved by a qualified radiographer before the patient leaves.

Students are responsible to adhere to this policy. Clinical instructors are responsible to see that it is enforced.

Failure to adhere to this policy, not only jeopardizes liability insurance coverage for the students, but also may result in disciplinary action to the student.

Repeating of radiographs will be done only in the presence of a qualified technologist. All repeated radiographs are to be documented by the student and initialed by the technologist.

STUDENT'S NAME: _____

SEMESTER: _____

**Competency-Based Clinical Evaluation System for Student Radiographers
EVALUATION OF PROFESSIONAL
ETHICS AND ATTITUDES**

CRITERIA FOR EVALUATION	-3
The student exhibits:	
A. Respect for patient privacy by:	
1. Respecting patient modesty	
2. Not discussing patient with person not involved in care	
B. Proper patient communication by:	
1. Addressing patient by name	
2. Introducing her/him self to the patient	
3. Explaining the exam in lay terms	
4. Keeping patient informed of exam progress	
C. Proper respect for Radiologist and Staff Physicians	
D. Proper respect for Administrative Staff	
E. Cooperation with the Clinical Site Staff by:	
1. Accepting constructive criticism	
2. Observing rules and regulations	
F. A constant effort to become involved by:	
1. Offering assistance to staff	
2. Seeking responsible assignments	
3. Keeping busy	
G. Dependability by:	
1. Following instructions	
2. Punctuality	
3. Prompt notification of absence or tardiness	
4. Regular attendance	
5. Completing assignments	
H. Adherence to program dress code and personal cleanliness by:	
1. Wearing appropriate uniform	
2. Having hair clean and well kept	
3. Wearing name tag and film monitoring device	
I. Seeking assistance when necessary:	
1. When moving difficult patients	
2. In an emergency situation	
3. Any situation where the student is not competent	
J. Self-confidence by:	
1. The ability to adapt to new students	
2. Instilling confidence in patients	
3. Not being over confident	
4. Basing decisions on clear thought	

94-100 A

86-93 B

TOTAL POINTS _____

INSTRUCTOR: _____

STUDENT: _____

DATE: _____

Reviewed 6/07

Section 6

SYLLABI

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Introduction to Radiology, Protection, & Patient Care

COURSE NUMBER: RAD 105

CREDITS: 2

CLOCK HOURS: 30 hours

PREREQUISITES: Admission to School of Radiologic Technology

COURSE DESCRIPTION: An introduction to the career of Radiologic Technology, its history and its role in healthcare delivery. Basic medical terminology, radiation protection, radiographic equipment, radiologic procedures, exposure factors, and film processing are discussed. Professional ethics and legal responsibilities are introduced.

EVALUATION TECHNIQUES: Quizzes
Tests
Participation

USE OF MEDIA AND RESOURCES:

Worksheets, Overheads, and Videos

Text:

*Adler, Carlton; Introduction to Radiography and Patient Care, 4th Edition

*Gyls, Barbara; Medical Terminology Systems, 6th Edition

COURSE OBJECTIVES: The student will:

1. Name and describe the function of each member of the health care team and/or health care professional.
2. Describe relationships and functions of each department within a hospital.
3. Define health and the basic terms in radiology.
4. Name the types of hospitals and their functions.
5. Identify national, state and local organizations for radiographers.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

6. Discuss career advancements and opportunities for radiographers.
7. Name and describe the types of administration within a hospital.
8. Identify accrediting and credential process and agencies.
9. Identify types and uses of radiographic equipment.
10. Discuss ethical and legal considerations.
11. Name the basic exposure factors.
12. Discuss basic principles of radiation protection for self, staff, and patients.
13. Define malpractice and the elements necessary for a claim.
14. Identify the types of medical doctors and other health professionals.
15. Identify the principle historical developments in radiology, hospitals, nursing and medicine (health).
16. Identify the necessary information on an x-ray requisition including consent forms.
17. Discuss basic safety considerations for self and patients in physically handling patients.
18. Spell and define medical terms pertinent to radiology and diagnosis.

COURSE CONTENT:

- Identification of Health Care Professionals
- Hospital Management Structure
- Basic Terms of Medicine and Radiology
- Professional Organizations
- Career Ladders
- Accrediting Agencies
- Ethics
- Legal Responsibilities
- Basic Radiation Protection
- History
- Flow Charts
- Identification of Equipment and Procedures in Radiology
- Basic Math and Elementary Algebra
- Patient Bill of Rights
- Medical Terminology

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class, are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiologic Science I
COURSE NUMBER: RAD 111
CREDITS: 4
CLOCK HOURS: 60 hours
PREREQUISITES: RAD 105

COURSE DESCRIPTION: The student will learn the basic concepts of atomic structure, electricity, electromagnetism, electromagnetic spectrum, and the energy and energy transformation required in the production of radiation. Discussion of the circuitry common to most radiographic equipment and the methods of modifying an x-ray beam for radiographic purposes.

EVALUATION TECHNIQUES: Workbook Exercises, Quizzes, Tests, and Final Examination

USE OF MEDIA AND RESOURCES:

Text:

*Radiologic Science for Technologist; Bushong; 9th Edition

Radiologic Science - Workbook and Laboratory Manual; Bushong, 9th Edition

Digital Radiography and PACs; Carter

COURSE OBJECTIVES: After lecture, review of concepts and completion of worksheets, the student will:

1. Identify symbols used in an x-ray circuitry schematic.
2. Distinguish types of transformers and generators and explain their functions.
3. Summarize wave rectification.

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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

4. Explain the conditions necessary for x-ray production and outline the controlling factors.
5. Identify, define and calculate various forms of energy.
6. Identify and explain the components of matter and the atom.
7. Interpret the periodic table.
8. Define terms relating to ionization and transitional elements.
9. Explain the types of radioactivity.
10. Explain wave and particle theory.
11. Explain the Inverse Square Law and its application to radiation.
12. Know the basic concepts of electricity, electrostatics, magnets, magnetism, and electromagnetism.
13. State Lenz's Law and its application to motors and generators
14. Know the components and wavelengths of the electromagnetic spectrum.
15. Solve problems utilizing the 15% rule.
16. Name the major components of the x-ray tube and their function in the production of radiation;
17. Explain how MAS is calculated.
18. Explain the basic operation of the x-ray tube.
19. Define half value layer and describe its application in terms of radiation output and patient dosage.
20. List and differentiate the x-ray interactions with matter.
21. Describe factors affecting the quality and quantity of an x-ray beam.
22. Identify the types of radioactivity and explain the atomic structure of radioactive structure and decay.

COURSE CONTENT:

Atomic Structure
Electricity
Transformers/Autotransformers
Rectification
Radioactivity
Types of Radiographic Machines
Production of X-ray
Basic X-ray Machine Circuits
Electron-Target Interactions
X-ray Interactions and Attenuation
Magnetism
Electromagnetism
Electromagnetic Spectrum

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY
COURSE SYLLABUS**

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class, are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiographic Procedures I
COURSE NUMBER: RAD 121
CREDITS: 3 credits lecture, 1 credit lab
CLOCK HOURS: 45 hours lecture and 45 hours lab
PREREQUISITES: BIO 145, RAD 105

COURSE DESCRIPTION: Divided into two concurrent components. Radiologic Anatomy, which introduces the student to the architectural plan of the body with emphasis on the structure and function of the skeleton and radiographic positioning terminology. This component will focus on the thoracic and abdominal cavities, bone development, upper and lower extremities, shoulder girdle, and bony thorax. The appearance of these structures on a radiograph will be emphasized. The second component is radiographic positioning which covers the manipulation of radiographic equipment, accessories, and the patient to produce the standard radiographic images of each body part.

EVALUATION TECHNIQUES:

Tests	50%
Lab Examination	25%
Final Examination	25%

USE OF MEDIA AND RESOURCES:

Text:

Merrill's Atlas of Radiographic Positions and Radiologic Procedures, 11th Edition, by Frank, Long & Smith

Radiographic Pathology for Technologists; Mace, 5th Edition

COURSE OBJECTIVES: The student will:

1. Define medical terms relating to human anatomy and patient positioning.
2. Name the body cavities, regions, and basic body habitus.
3. Identify the structures within the chest, abdomen, upper and lower extremities, shoulder girdle, and bony thorax, on a diagram and radiograph.

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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

4. Evaluate images for proper technical factors and correct positioning.
5. Simulate in a lab setting, the positions for radiographing the chest, abdomen, upper and lower extremities, shoulder girdle, and bony thorax.
6. In the lab setting, make phantom exposures using proper measurements and technique selection.

COURSE CONTENT:

Body Cavities: Quadrant Regions
Radiographic Positioning Terminology

Thoracic Cavity

Pathway of Air
Chest structures – Contents
Projections and Central Ray
Appearance on a Radiograph

Abdominal Cavity

Abdominal Organs
Body Habitus
Projections and Central Ray
Appearance on Radiograph

Upper Extremities

Anatomy and Positioning of Finger, Hand, Wrist, Forearm, AC
Joints, Humerus, Shoulder, Elbow, Thumb, Special
Projections and Their Appearance on a Radiograph

Lower Extremities

Anatomy and Positioning of Toes, Foot, Ankle, Tib-Fib, Knee, Os
Calcis, Patella and Their Appearance on a Radiograph
Special Projections

Bony Thorax

Anatomy and Positioning of the Ribs, Sternum, Clavicle, and SC
Joints

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COURSE SYLLABUS

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiographic Procedure Labs

COURSE NUMBER: RAD 121, RAD 221

CREDITS: 1

CLOCK HOURS: 45

PREREQUISITES: Concurrent with Lecture

COURSE DESCRIPTION: Radiographic laboratory is to provide the student with experience in positioning, role playing as radiographer and patient, computer program application, and film critique.

EVALUATION TECHNIQUES: Worksheets
Lab tests
Projects

USE OF MEDIA AND RESOURCES:

Radiographic table and x-ray tube
Radiographic films
Automatic film processor (Main Radiology)
Computer programs
Digital Imaging

COURSE OBJECTIVES:

The student in a laboratory setting will:

1. Observe the proper positioning and patient care for designated radiographer procedures;
2. Demonstrate proper positioning, selection of correct exposure factors, and patient care for designated radiographic examinations. This may be accomplished through testing or lab participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

3. Identify and label on images related anatomy, pathology and structures of the radiographic procedures;
4. Participate in film critique for radiographic procedures, and;
5. With the assistance of the lab instructor, successfully completes assigned laboratory worksheets.

COURSE CONTENT: Demonstration and application to correlate with lecture material weekly.

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiologic Science II

COURSE NUMBER: RAD 112

CREDITS: 4

CLOCK HOURS: 60 hours

PREREQUISITES: RAD 111

COURSE DESCRIPTION: An introduction to the prime factors of radiographic exposure and its effect on the radiographic image. Discussion of the factors affecting radiographic definition and their influence on radiographic quality. The adjustment of the prime exposure factors and how they effect radiographic quality are presented in classroom discussion and in laboratory demonstration. Students will be involved in solving technical problems, making technical adjustments, film critique, film processing, and image manipulation. Discussion of digital, fluoroscopic, and image intensification topics is included.

EVALUATION TECHNIQUES: Tests
Exam
Laboratory Exercises
Worksheets

USE OF MEDIA AND RESOURCES:

Text:

Radiologic Science for Technologists; Bushong, 9th Edition

Radiologic Science Workbook and Laboratory Manual; Bushong, 9th Edition

Digital Radiography and PACs; Carter

COURSE OBJECTIVES: The student will be able to:

1. Solve problems utilizing the inverse square law.
2. Solve problems utilizing the 15% rule.
3. Identify the anatomical and pathological conditions effecting radiographic quality.
4. Explain how MAS is calculated.
5. Name the basic factors of radiographic quality.

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SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

6. Give the production of secondary/scattered radiation and the factors affecting it.
7. Define filtration and name the types and kinds of filters used in radiography.
8. Name the controlling and influencing factors for radiographic definition.
9. Name the types and uses of beam restricting devices.
10. Perform radiographic experiments as assigned.
11. Define and name the controlling and influencing exposure factors of the following:
 - a. radiographic density
 - b. radiographic contrast
 - c. radiographic distortion: size and shape
 - d. radiographic detail
12. Differentiate between subject contrast and film contrast.
13. Solve problems of exposure factor adjustments through KV, MAS, distance, grids, film and screens.
14. Define HVL and describe its application in terms of radiation output and patient dosage.
15. Define photographic effect and solve problems utilizing all factors.
16. Name the types, speeds and influencing factors of intensifying screens and radiographic films.
17. Name the factors of material & geometric unsharpness and their effect on detail.
18. Solve problems dealing material, geometric and total unsharpness.
19. Name the types of technique charts and how to formulate each.
20. Give the conversion factors for the use of various grids and grid ratios, screens and films.
21. Analyze relationships of factors affecting exposure calculations.
22. Identify the components of H & D curves.
23. Interpret the findings from H & D curves relating to contrast, latitude and film speed.
24. Calculate problems dealing with radiographic magnification.
25. Define radiographic distortion relating to both shape and size, and identify the factors affecting distortion.
26. Perform radiographic experiments illustrating the effects of the radiographic exposure factors on radiographic quality.
27. Define and name the purpose of grids.
28. Define quantum mottle and its effect on radiographic quality.
29. Define the "Heel Effect" and how it effects radiographic quality.
30. Name the controlling and influencing factors for radiographic quality.

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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

31. Identify the chemical agents used in the development of radiographic film and their function.
32. Name the components and their functions of radiographic film.
33. Describe the latent image formation.
34. Explain the fundamentals of proper film storage and handling.
35. Explain the process of film identification.
36. Describe the types of silver recovery systems.
37. Explain the operation of an automatic film processor and the functions of each section.
38. Describe the design and needs of radiographic darkroom.
39. Identify film artifacts and their origin.
40. Identify and label the fluoroscopic room and its components.
41. Explain the operation of the image intensifier, the TV camera, and TV monitor for fluoroscopic procedures.
42. Explain the concepts of tomographic motion blur, tomographic angle, and section thickness.

- COURSE CONTENT:**
- Radiographic Exposure Factors: KV, MAS, distance
 - Secondary Radiation
 - Filtration
 - Beam Restriction
 - Anatomical and Pathological Conditions and their Effect on Radiographic Quality
 - 15% Rule
 - Inverse Square Law
 - Components of Radiographic Quality and the Controlling and Influencing Factors of Each
 - Contrast
 - Density
 - Detail
 - Problem Solving - Adjusting Technical Factors
 - HVL and Its Application
 - Radiographic Experiments Illustrating the Effects of the Exposure Factors on Radiographic Quality
 - Exposure Limits and Cooling Charts
 - Influences of Intensifying Screens and Radiographic Film
 - Photographic Effect
 - Conversion Factors for Screens-Film Combinations
 - Characteristic Curves
 - Development of Exposure Charts

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COURSE SYLLABUS

COURSE CONTENT: Radiographic Film Processing
Tomography
Image Intensification

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiologic Science & Patient Care Procedures

COURSE NUMBER: RAD 125

CREDITS: 2

CLOCK HOURS: 30 hours

PREREQUISITES: RAD 121

COURSE DESCRIPTION: This course provides the student with the skills necessary for proper patient care. A focus on communications, patient needs and handling for radiographic procedures, patient care procedures in specific situations, and basic first aid pertinent to radiography procedures.

EVALUATION TECHNIQUES: Chapter Examinations
Class Participation
Demonstrations
Final Examination

USE OF MEDIA AND RESOURCES:

Text:

*Adler, Carlton; Introduction to Radiologic Sciences and Patient Care; 4th Edition

COURSE OBJECTIVES: The student will be able to:

1. Define terms associated with radiologic technology.
2. Discussion of career opportunities in radiologic technology.
3. Explanation of RMH organization and radiology department.
4. Discuss methods of assessment in the clinical education process.
5. Discussion of different methods of communication and patient/student interactions.

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COURSE SYLLABUS

6. Distinguish between subjective and objective data.
7. Demonstrate principles of body mechanics applicable to patient care, transfer, comfort and safety.
8. Identify specific patient considerations, conditions and procedures.
9. Demonstrate immobilization techniques.
10. Discuss vital signs and oxygen therapy.
11. Define terms related to infection control, identify basic infectious agents, sources of nosocomial infections and environmental control.
12. Discuss principles of aseptic techniques and non-aseptic techniques.
13. Discuss signs of various medical emergencies.
14. Identify principles of drug administration and routes of administration.
15. Identify ethical analysis, management of patient records, quality assessment and patient confidentiality.

COURSE CONTENT: Introduction to and General Patient Care
Specific Nursing Procedures
Emergency Care Procedures
Infection Control
Contrast Medias and Administration

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

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SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Elementary Clinical Procedures I
COURSE NUMBER: RAD 131
CREDITS: 2
CLOCK HOURS: 14 hours per week/2 days per week
PREREQUISITES: RAD 121

COURSE DESCRIPTION: To acquaint the student with the hospital environment through supervised participation of theories presented in the classroom. Emphasis on patient care, protocol in the hospital and the radiology department, identification of radiographic equipment and supplies, office and darkroom procedures, and general diagnostic areas.

EVALUATION TECHNIQUES:

Completed Weekly Clinical worksheets	33%
Clinical instructors' evaluation	33%
Completed Weekly Staff evaluations	33%

USE OF MEDIA AND RESOURCES: Demonstration
Active participation
Film critique

COURSE OBJECTIVES: The student will:

1. Demonstrate proper body mechanics in transporting, positioning and moving patients.
2. Provide quality patient care physically, mentally and emotionally.
3. Properly describe the flow of an inpatient and outpatient through the radiology department along with the appropriate paper work.

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SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Human Diseases & Radiography

COURSE NUMBER: RAD 206

CREDITS: 2

CLOCK HOURS: 30 hours lecture

PREREQUISITES: BIO 145; RAD 105

COURSE DESCRIPTION: Introduces the various diseases and anomalies that may be manifested on the radiograph. Presents diseases related to the various body systems. Places emphasis on the relationship of the disease process and radiographic density.

EVALUATION TECHNIQUES:	Tests	75%
	Final Examination	25%

USE OF MEDIA AND RESOURCES:

Text:

*Merrill's Atlas of Radiographic Positions and Radiologic Procedures, 11th Edition, by Frank, Long & Smith.

Radiographic Pathology for Technologists; Mace; 5th Edition

COURSE OBJECTIVES: The student will:

1. Define medical terms relating to human anatomy and patient positioning.
2. Identify the structures within the chest, abdomen, upper and lower extremities, shoulder girdle, and bony thorax, on a diagram and radiograph.
 - a) Describe pathological conditions and their relationships to radiographic procedures.
 - b) Describe complications and prognosis for classifications of tumors.
 - c) List and define systematic classifications of disease.
 - d) Describe the healing process.
 - e) Describe the effects of disease on radiological procedures and techniques.

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SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

3. Evaluate images for proper technical factors according to pathological conditions.

COURSE CONTENT:

General Principles of Pathology
Pathologies of the Respiratory System
Pathologies of the Abdominal Cavity
Pathology of the Upper Extremities and Shoulder
Pathology of the Lower Extremities
Pathology of the Bony Thorax
Pathology of the Pelvic Girdle
Pathology of the Spinal Column
Pathology of the Skull
Pathology of the Biliary System
Pathology of the Digestive System
Pathology of the Urinary System
Pathology of the Reproductive System
Pathology of the Cardiovascular System
Pathology of the Hemopoietic System
Pathology of the Central Nervous System
Pathology of the Endocrine System
Traumatic Disease

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiographic Procedures II
COURSE NUMBER: RAD 221
CREDITS: 4
CLOCK HOURS: 45 hours lecture and 45 hours lab
PREREQUISITES: RAD 121 & Concurrent with RAD 131

COURSE DESCRIPTION: Continues procedures for positioning the patient's anatomical structures relative to x-ray beam and image receptor. Emphasizes procedures for routine examination of the pelvic girdle, vertebral column, skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body.

EVALUATION TECHNIQUES:

Tests	50%
Final Examination	25%
Labs	25%

USE OF MEDIA AND RESOURCES:

Text:

Merrill's Atlas of Radiographic Positions and Radiologic Procedures, 11th Edition, by Frank, Long & Smith.

Radiographic Pathology for Technologists; Mace, 5th Edition

COURSE OBJECTIVES: The student will:

1. Identify the structures of the digestive, urinary, and biliary systems, pelvic girdle, vertebral column, skull, and spinal column on a diagram and radiograph.
2. Simulate in a laboratory the positions for radiographing the vertebral column, skull, pelvic girdle, and digestive urinary and biliary systems.
3. Evaluate images for proper technical factors and correct positioning.

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SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

4. In the lab setting, make phantom exposures, using proper measurements and technique selection.
5. Distinguish the difference between typical vertebrae in each region of the spine.

COURSE CONTENT: Anatomy & Positioning of:
 Pelvic Girdle
 Spinal Column
 Biliary System
 Digestive System
 Urinary System
 Skull/Headwork

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiographic Procedure Labs

COURSE NUMBER: RAD 121, RAD 221

CREDITS: 1

CLOCK HOURS: 45

PREREQUISITES: Concurrent with Lecture

COURSE DESCRIPTION: Radiographic laboratory is to provide the student with experience in positioning, role playing as radiographer and patient, computer program application, and film critique.

EVALUATION TECHNIQUES: Worksheets
Lab tests
Projects

USE OF MEDIA AND RESOURCES:

Radiographic table and x-ray tube
Radiographic films
Automatic film processor (Main Radiology)
Computer programs
Digital Imaging

COURSE OBJECTIVES:

The student in a laboratory setting will:

- a. Observe the proper positioning and patient care for designated radiographer procedures;
- b. Demonstrate proper positioning, selection of correct exposure factors, and patient care for designated radiographic examinations. This may be accomplished through testing or lab participation.

**ROCKINGHAM MEMORIAL HOSPITAL
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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

- c. Identify and label on images related anatomy, pathology and structures of the radiographic procedures;
- d. Participate in film critique for radiographic procedures, and;
- e. With the assistance of the lab instructor, successfully completes assigned laboratory worksheets.

COURSE CONTENT: Demonstration and application to correlate with lecture material weekly.

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Advanced Clinical Procedures I
COURSE NUMBER: RAD 231
CREDITS: 5
CLOCK HOURS: 35 hours per week/5 days per week
PREREQUISITES: RAD 131

COURSE DESCRIPTION: This course is a continuation of RAD 131 with an introduction to surgery, trauma and specialty areas. This is a period for the student to work more independently thus gaining self-confidence. Basic radiographic procedures are demonstrated with competency testing.

EVALUATION TECHNIQUES:

Clinical instructor's evaluation	25%
Competency based evaluations	25%
Completed Weekly Staff evaluations	25%
Completed Worksheets	25%

COURSE OBJECTIVES: The student will:

1. Continue to demonstrate the objectives from the previous Clinical Radiography course.
2. Begin to demonstrate performance competency in radiographic procedures.
3. Select proper radiographic exposure factors.
4. Evaluate radiographic image quality.
5. Repeat unsatisfactory images with assistance.
6. Perform radiographic procedures with indirect supervision on areas where performance competency has been demonstrated.

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SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiation Protection & Radiobiology

COURSE NUMBER: RAD 205

CREDITS: 3

CLOCK HOURS: 45 hours

PREREQUISITES: RAD 112

COURSE DESCRIPTION: Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist.

EVALUATION TECHNIQUES: Tests
Final Exam

USE OF MEDIA AND RESOURCES:

Text:

*Radiation Protection in Medical Radiography; 5th Edition; Statkiewicz, Visconti & Ritenour
Radiographic Science for Technologist, Bushong; 9th Edition;

COURSE OBJECTIVES: The student will:

1. Explain the need for radiation protection procedures.
2. Identify the various sources of natural background ionizing radiation and the different sources of manmade, or artificial, ionizing radiation.
3. Explain the responsibility of radiation protection in the field of radiology.
4. Define terms pertinent to radiation protection.
5. Identify interactions of radiation as it passes through matter.
6. Identify the effects of radiation on patient, film, and radiographer.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

7. Determine the dose equivalent and absorbed dose for different ionizing radiations.
8. Explain the results of biological damage resulting from irradiation of human tissue.
9. Explain the ALARA concept and the limits for occupational workers.
10. Identify the agencies dealing with radiation exposure and protection.
11. State the formula determining MPD and solve problems dealing with MPD.
12. Define and explain terms relating to radiation biology.
13. List the three levels of biological damage to living cells and systems as a result of ionizing radiation.
14. Identify and describe long term and short term effects of ionizing radiation.
15. Explain how patient dosage can be reduced during exposure utilizing beam restricting, filtration, and shield devices.
16. State and explain the inverse square law.
17. Explain the result of patient exposure with screen and film speed variations.
18. Identify the various radiation protection measures.

COURSE CONTENT:

- Basis for Radiation Protection
- Production of X-Radiation
- Ionizing Radiation
- Interactions of Radiation with Matter
- Biologic Effects
- Radiobiology
- Early and Late Effects of Radiation
- Health Physics
- Protecting the Radiographer
- Protecting the Patient

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

**ROCKINGHAM MEMORIAL HOSPITAL
SCHOOL OF RADIOLOGIC TECHNOLOGY**

COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Correlated Radiographic Theory

COURSE NUMBER: RAD 215

CREDITS: 2

CLOCK HOURS: 30 hours plus mandatory labs

PREREQUISITES: RAD 121; RAD 221

COURSE DESCRIPTION: This course provides the student with skills for proper patient care and radiographic positioning of the trauma and pediatric patient and surgical procedures.

EVALUATION TECHNIQUES: Class participation
Demonstrations
Tests and Case Studies
Final examination

USE OF MEDIA AND RESOURCES: Guest Lectures
Overheads

Text:

Introduction to Radiologic Sciences and Patient Care; Adler, Carlton, 4th Edition

Merills Atlas of Radiographic Positions & Radiologic Procedures, 11th Edition. Frank, Long & Smith.

Radiographic Pathology for Technologists; Mace, 5th Edition

COURSE OBJECTIVES: The student will:

1. Define terms associated with the trauma, pediatric and surgical patient.
2. List the sequence of routine procedures of trauma, pediatric and surgical patients.
3. Describe the possible adaptations in positioning and techniques for trauma, pediatric and surgical procedures.

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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

4. Identify different methods of immobilization.
5. Describe methods of radiation protection for trauma, pediatric and surgical procedures.
6. Name the possible complications associated with trauma, pediatric and surgical procedures and the special considerations for each case.

COURSE CONTENT: Pediatric Radiography
 Trauma Radiography of the Extremities, Spine & Skull
 Surgical Radiography

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

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COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Advanced Clinical Procedures II
COURSE NUMBER: RAD 232
CREDITS: 4
CLOCK HOURS: 21 hours per week/3 days per week
PREREQUISITES: RAD 231

COURSE DESCRIPTION: This semester the student is provided with the opportunity to operate more independently in all areas of basic radiography. The student will begin to rotate through some of the specialized areas. Competency testing continues with development in proficiency.

EVALUATION TECHNIQUES:

Clinical instructor's evaluation	25%
Competency based evaluations	25%
Completed Staff evaluations	25%
Completed Worksheets	25%

USE OF MEDIA AND RESOURCES: Demonstration
Active participation
Film critique

COURSE OBJECTIVES: The student will:

1. Continue to demonstrate the objectives of the previous clinical radiography courses.
2. Demonstrate performance competency in radiography of the skull and of contrast media studies.

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COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Special Procedures

COURSE NUMBER: RAD 246

CREDITS: 2

CLOCK HOURS: 30 hours

PREREQUISITES: RAD 112, RAD 231

COURSE DESCRIPTION: This course studies the special radiographic procedures and equipment employed in the more complicated investigation of internal conditions of the human body. The student is introduced to the specialized studies of the vascular system as well as cross sectional anatomy as utilized in CT/MRI procedures. Discussions will include the topics of; equipment, physical settings, contrast agents, positioning, and procedures. The student will also participate in a unit on critical thinking issues.

EVALUATION TECHNIQUES: Tests
Final Examination
Quizzes
Research Paper/Case Study
Clinical Reports from Modality Rotations

USE OF MEDIA AND RESOURCES: Various Journal Articles
Audio-Visual
Handouts
Guest Speakers

Text:

Applied Angiography for Radiography; Laudicina

Concepts in Medical Radiographic Imaging; Tortorici

Critical Thinking Workbook for Radiographers; Towsley

Fundamentals of Special Radiographic Procedures; Snopak, 5th Edition

Merrill's Atlas of Radiographic Positions and Radiographic Procedures; 11th Edition. Frank, Long & Smith.

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COURSE SYLLABUS

USE OF MEDIA AND RESOURCES (CONTINUED):

Radiographic Science for Technologists; Bushong; 9th Edition
Digital Radiography and PACs; Carter

COURSE OBJECTIVES: The student will:

1. Recognize obstacles to critical thinking.
2. Raise questions of a moral and ethical professional nature.
3. Integrate critical thinking, professionalism, and problem solving into the clinical environment.
4. Display empathy and concern for patients, and peers through role-playing.
5. Discuss the differences between soft tissue radiography and conventional radiography.
6. Discuss the advantages of mammographic compression.
7. Describe the tube/target composition, focal spot size and kVp, image receptors and tube filtration used in mammography.
8. Define the types of special procedures naming the parts of the anatomy involved and why each is done.
9. Give the steps to the various approaches to special procedures.
10. Identify equipment and accessory items in the special procedures suite.
11. Have a basic knowledge of DSA.
12. Identify the specific procedures done and any abnormalities found.
13. Explain the Seldinger approach.
14. Explain the importance of pre, during and post angiogram care.
15. Identify on a drawing the important organs, arteries and veins associated with angiographic studies.
16. Demonstrate opening of sterile packages, trays, proper gowning and gloving procedures for angiography.
17. Identify the most common contrast medias used with each procedure.
18. List the common contrast media reactions.
19. Relate the research and development of digital imaging.
20. Discuss the components of a digital radiographic/fluoroscopy system and its functions.
22. Explain picture archiving and teleradiography systems.
23. Discuss the concepts of transaxial tomography, translation and reconstruction of images.

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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

24. Describe CT image characteristics of image matrix and CT numbers.
25. Relate the CT system components and their functions.
26. Discuss CT image quality as it relates to spatial resolution, contrast resolution, system noise, linearity and spatial uniformity.
27. Describe the sources of the magnetic fields within the body that are used during MRI.
28. Describe the components of an MRI unit, including the stationary magnet, gradient and RF coils, table, and computer consoles.
29. Explain how MRI image contrast is controlled.
30. Describe the use of contrast agents in MRI.
31. Discuss safety measures for protection of patients and staff who approach the magnetic field.
32. Demonstrate continuing score improvement on the development tests.

COURSE CONTENT: Critical Thinking
 Mammography
 Special Procedures/Cath Lab
 Digital Imaging
 CT Scanning
 MRI

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

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COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Radiographic Equipment

COURSE NUMBER: RAD 255

CREDITS: 3

CLOCK HOURS: 45 hours

PREREQUISITES: RAD 246

COURSE DESCRIPTION: An investigative/research class of possible career ladders or areas of specialization in medical imaging. Various types of imaging equipment and techniques and the latest issues, trends and developments in radiology will be discussed. The course studies the fundamental organization and procedures of a radiology department quality assurance program. The student will be introduced to and will perform a varied number of non-invasive quality control tests designed to evaluate the operating performance of radiographic and accessory equipment. The course will also include projects designed to enhance the student's understanding of materials presented in the classroom.

EVALUATION TECHNIQUES: Tests
Final Examination
Quizzes
Research Projects

USE OF MEDIA AND RESOURCES: Various Journal Articles
Audio-Visual Media
Handouts
Guest Speakers

Text:

Radiographic Science for Technologist; Bushong; 9th Edition

Digital Radiography and PACs; Carter

Review for the Radiography Examination; Saia; 6th Edition

Comprehensive Review of Radiography; Callaway; 5th Edition

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COURSE SYLLABUS

COURSE OBJECTIVES: The student will:

1. Relate the research and development of digital imaging.
2. Identify the basic duties of personnel in each of the medical imaging modalities and radiation therapy.
3. Describe the academic preparation for continued education relating to medical imaging.
4. Write a cover letter, resume and response letters.
5. Describe how to prepare for a job interview.
6. Define quality control and relate it to mammography as well as diagnostic radiology settings.
7. List the processor quality control steps.
8. Successfully complete a Q.A. test in the radiography department.
9. List and explain the types of quality control techniques and equipment checks in a radiography department.
10. Describe how to produce a technique chart from start to finish.

COURSE CONTENT: Management
Education
Self Assessment
Marketing
Resume Writing & Interviewing
Quality Assurance Management
Quality Control Techniques
Basic Equipment Checks
Technique Project

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

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COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Clinical Practice
COURSE NUMBER: RAD 290
CREDITS: 4
CLOCK HOURS: 21 hours per week clinical
PREREQUISITES: RAD 232

COURSE DESCRIPTION: This semester the student has the opportunity to complete and correlate all clinical and didactic experiences to a high degree of efficiency and proficiency. The student is able to demonstrate a great deal of independence in discretion and judgment while performing basic radiographic procedures. Completion of all competency based testing and surgical sheet is required. The student will finish the clinical rotations through the specialized areas.

EVALUATION TECHNIQUES:

Written clinical examination	20%
Completed Staff evaluations	20%
Clinical instructor's evaluation	20%
Competency Based Evaluations	20%
Completed Worksheets	20%

USE OF MEDIA AND RESOURCES: Demonstration
Active participation
Film critique

Merrill's Atlas of Radiographic Positions and Radiographic Procedures; 11th Edition. Frank, Long & Smith.
Radiographic Pathology for Technologist. 5th Edition. Mace.

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COURSE SYLLABUS

COURSE OBJECTIVES: The student will:

1. Use oral and written medical communications.
2. Demonstrate knowledge of human structure, function and pathology.
3. Anticipate and provide basic patient care and comfort.
4. Apply principles of body mechanics.
5. Perform basic mathematical functions.
6. Operate radiographic imaging equipment and accessory devices.
7. Position the patient and imaging system to perform radiographic examinations and procedures.
8. Modify standard procedures to accommodate for patient condition and other variables.
9. Process images.
10. Determine exposure factors to obtain diagnostic quality images with minimum radiation exposure.
11. Adapt exposure factors for various patient conditions, equipment, accessories and contrast medias to maintain appropriate imaging quality.
12. Practice radiation protection for patient, self and others.
13. Recognize emergency patient conditions and initiate first aid and basic life-support procedures.
14. Evaluate radiographic images for appropriate positioning and image quality.
15. Evaluate the performance of radiographic systems, know the safe limits of equipment operation, and report malfunctions to the proper authority.
16. Demonstrate knowledge and skills relating to quality assurance.
17. Exercise independent judgment and discretion in the technical performance of medical imaging procedures.
18. Participate in quality assurance procedures.
19. Complete all required competencies and surgical sheet.

COURSE CONTENT: Rotations: all clinical areas

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

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COURSE SYLLABUS

Instructor's Signature

Date

COURSE TITLE: Review and Seminar

COURSE NUMBER: RAD 99

CREDITS: 0

CLOCK HOURS: 60 hours

PREREQUISITES: Last Semester of Program

COURSE DESCRIPTION: This course will pull together all of the program material into a total perspective of the profession for radiography and medical imaging. The student will participate in numerous mock registry examinations and attend a student review seminar in preparation for the ARRT examination.

EVALUATION TECHNIQUES: Mock Registry Examinations
Category Examinations

USE OF MEDIA AND RESOURCES: Worksheets, Videos, Overheads, Film Critique,
Computer Programs

Text: Previous program texts

COURSE OBJECTIVES: The student will:

1. Complete all computer assisted programs with a score of 75% or higher.
2. Attend a registry review seminar for students.
3. Demonstrate progressive improvement on the developmental tests.
4. Achieve a grade of 75% or higher on the final 200 point mock registry examination (note: the student will have only 3 opportunities to achieve this score).
5. Actively participate in film critique.
6. Identify the controlling and influencing factors for imaging quality, image production and image evaluation.

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COURSE SYLLABUS

COURSE OBJECTIVES (CONTINUED):

7. Identify the film size, CR, screen speed, anatomical and pathological structures, patient position, and patient care and management for radiographic procedures.
8. Explain the structure and function of an X-ray tube, image intensifier, TV camera and monitor and automatic processor.
9. Describe the electromagnetic spectrum.
10. Describe the production and interaction of radiation.
11. Name the measures of radiation protection for the patient and personnel.
12. Identify somatic and genetic effects of radiation.

COURSE CONTENT: Image Production and Evaluation
 Radiation Protection & Biology
 Patient Care and Management
 Radiographic Anatomy and Procedures
 Radiographic Equipment Operation and Maintenance

ATTENDANCE: Mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide for equitable participation.

Section 7

BLUE RIDGE COMMUNITY COLLEGE

Section 8

GRADUATION REQUIREMENTS

GRADUATION REQUIREMENTS

PROGRAM GRADUATION REQUIREMENTS:

1. Successful completion of all clinical and graduation competencies;
2. Successful completion of all RAD course work with at least a "C" grade;
3. Successful completion of all required college course work.
4. Cumulative RAD and overall GPA of 2.5 or higher.
5. Students are required to take three mock registry examinations, with a passing grade of 75% or better achieved on at least one.

GRADUATION COMPETENCIES

1. Use oral and written medical communications;
2. Demonstrate knowledge of human structure, function and pathology;
3. Anticipate and provide basic patient care and comfort;
4. Apply principles of body mechanics;
5. Perform basic mathematical functions;
6. Operate radiographic imaging equipment and accessory devices;
7. Position the patient and imaging system to perform radiographic examinations and procedures;
8. Modify standard procedures to accommodate for patient condition and other variables;
9. Process radiographs;
10. Determine exposure factors to obtain diagnostic quality radiographs with minimum radiation exposure;
11. Adapt exposure factors for various patient conditions, equipment, accessories and contrast medias to maintain appropriate radiographic quality;
12. Practice radiation protection for patient, self and others;
13. Recognize emergency patient conditions and initiate first aid and basic life-support procedures;
14. Evaluate radiographic images for appropriate positioning and image quality;
15. Evaluate the performance of radiographic systems, know the safe limits of equipment operation, and report malfunctions to the proper authority;
16. Demonstrate knowledge and skills relating to quality assurance;
17. Exercise independent judgment and discretion in the technical performance of medical imaging procedures; &
18. Successfully completes the required clinical competencies.

CLINICAL COMPETENCIES:

1. Completion of the required CBE's;
2. Completion of all assigned clinical time; &
3. Completion of all objective sheets.

Section 9

FIRE PLAN

FIRE PLAN

Department: Imaging Services

PURPOSE: To provide an understanding of fire safety for staff working in various areas in Radiology.

PROCEDURE:

1) RACE

- a) All staff will have knowledge of what action is to be taken when a fire is observed or announced over the PA system.
- b) Procedures for the acronym RACE are outlined in the hospital Plan Manual.

2) PULL BOXES

Employees will be shown the location of pull boxes within their work area.

3) EXIT ROUTES/LIGHTS

Employees will be shown the location of exit signs and exit routes in their work area.

4) FIRE EXTINGUISHERS

Fire extinguishers are located near stairwells throughout the department and employees must be familiar with these locations.

5) SECURING AREA

- a) When a fire code is announced, staff will turn on lights and close all doors.
- b) Staff will stay in their location and will not pass through fire/smoke doors.
- c) Patients will be instructed not to take elevators or move about the hospital until the "all clear" is sounded.
- d) Oxygen supplies will be turned off by the supervisor and lead techs.

6) EVACUATING PATIENTS, VISITORS, AND STAFF

- a) Staff will remain in the area to assist in the evacuation of patients.
- b) Patients may be moved by any method that will move them to safety.
- c) When patients/visitors are cleared from the area, staff will then move to a safe location.

7) RESPONSIBILITY

It is the responsibility of the supervisor of each area to ensure that staff is familiar with the policy and knows the location of pull boxes, exit routes, extinguishers, and what protocol to follow in the event of a fire (RACE).

FIRE PLAN

for School of Radiologic Technology

PURPOSE: This plan is written specifically for radiography program staff and students located at 51-B Burgess Road, Harrisonburg, Virginia.

PROCEDURE:

1. This plan is a supplement to the hospital plan and the imaging department plan and is written to provide direction to students and staff in this area.
2. All staff and students will follow the procedures delineated by the acronym "RACE" as outlined in the hospital Plan Manual.
3. Staff and students will be shown the location of pull stations, exit lights, exit routes, and fire extinguishers.
4. Hall or passageways must be kept clear of equipment and clutter.
5. In the event of a fire alarm, staff will turn on lights and close doors throughout the area. Staff and students will remain in their area (if no fire is present) and will not walk through fire/smoke doors until the "all clear" is sounded.
6. All staff and students will participate in annual training on this, the Fire Plan for the School of Radiologic Technology, as well as the imaging department plan and the hospital wide plan.

FIRE PLAN

Department: Radiology Room Staff, Emergency Department

PURPOSE: To provide a basic understanding of fire protection and fire safety education for radiology employees working in the Emergency Department.

PROCEDURE:

- 1) All employees will follow the procedures delineated by the acronym "RACE" as outlined in the hospital Plan Manual.
- 2) All employees will be trained on the location of pull stations in the department. Generally, these are located at each stairwell exit; however, all employees should observe all areas to determine the location.
- 3) Employees are to be aware of the exit routes out of their area and should be familiar with the exit lights which lead to the safety of stairwells.
- 4) Fire extinguishers are located at the following locations:
 - a) Across from the nurse's station near the CCU elevator door
 - b) Next to the door to the ED staff lounge
 - c) Next to the shower room door
 - d) Next to the entrance to "old ASC"
- 5) There are smoke detectors located throughout the corridors. Employees should observe where these are located in their work area.
- 6) Special provisions for this department:
 - a) A sprinkler system has been installed throughout the department.
 - b) There are numerous exits from the Emergency Department which may be utilized dependent on the location of the fire, the number and condition of patients in the department, weather conditions, etc.
 - c) Main hallways should be kept clear of equipment. Wheelchairs, housekeeping carts, etc. which are being used may be temporarily parked in the hallway as long as they are on the same side. In the hallway along rooms 1-6, equipment will be parked on the side of the hall next to the patient room. In the hallway along rooms 11-14, equipment will be parked on the opposite wall from the patient room.
 - d) In the event of an alarm situation (non-fire emergency), employees will turn on lights and close doors throughout the department, keeping all patients and families stationary so no traffic passes through smoke doors and elevators within the department are not used. The staff will remain on alert until "all clear" is called. Staff will move through fire doors within the department only as necessary to continue patient care.

- e) In the event of pending evacuation of the department, all staff will maintain safety of patients and visitors as first priority.
 - i) Patients will be placed on portable equipment as needed (portable O2 tanks, battery-operated cardiac monitor/defibrillators, etc.)
 - ii) Hallways will be cleared of any equipment (housekeeping carts, etc.) in order to provide maximum clearance for removal of patients.
 - iii) Triage nurse will clear the front lobby of all persons present and control access doors to prevent further reentry of patients or visitors.

- 7) All employees will receive annual training on in-hospital and department-specific plans.