RADIATION THERAPY EDUCATION PROGRAM

Policies, Procedures and Guidelines
for the Student Therapist

STUDENT HANDBOOK

Volume II: Radiation therapy specific policies

2019-2020 Academic Year

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Introduction

Radiation Therapy Education Program Policies and Procedures

Program Description:

The Radiation Therapy program at West Virginia University Hospitals is a 12 month certificate program consisting of approximately 40 hours per week of clinical and didactic instruction. The program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). Successful completion may qualify graduates as eligible to sit for the American Registry of Radiologic Technologists (A.R.R.T.) certification exam in Radiation Therapy pending ARRT review and approval.

Facilities:

The Radiation Therapy department's primary clinical site is located in the Mary Babb Randolph Cancer Center which is a subdivision within the WVUH complex. The WVUH Radiation Oncology Department has some of the most technologically advanced equipment available to treat cancer, including two Varian ™ Linear Accelerators(Trilogy and True Beam) with Cone Beam CT, RPM, IMRT and SBRT capability, a Toshiba™ LB Virtual CT Simulator, an Electa Leksell ™ Perfexion Gamma Knife Unit, and brachytherapy sources including HDR. Treatment planning is facilitated through Varian Eclipse™ and the Aria™ record and verify system.

Trajecsys Report System™:

The Trajecsys Report System™ has been implemented into our radiation therapy program for the purpose of clinical tracking. This electronic record has taken the place of the traditional paper clinical handbook that contained all of the student evaluations, including but not limited to the evaluations and competency examinations. Each enrolled student will be required to pay a one-time fee of $100.00 for usage of this system during the 12 month program. Fees are subject to change without notice.

Policies & Documents

The following policies and documents are available on-line for prospective students and the general public. Select the title to view.

History and Philosophy
of
West Virginia University Hospitals
Radiation Therapy Education Program

History:

The West Virginia University Hospitals Radiation Therapy Education Program originated in August of 1975 with the enrollment of three students.

The program was under the direction of the Radiation Therapy Department Chairman, Dr. Reddi, and administered by Melinda Hazy, Chief Technologist. The twelve month program has been accredited since 1975 by the Joint Review Committee on Education on Education in Radiologic Technology (20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901, (312) 704-5300). The program has graduated 33 classes to date, awarding certificates to 115 individuals.

Facilities:

The Radiation Therapy Education Program is located within the division of Radiation Oncology of the Department of Radiology at West Virginia University Hospitals, in the Health Sciences building. West Virginia University Hospitals, a 376 bed facility, is the keystone of a statewide structure for educating health professionals, and improving the health of all West Virginians. It is the teaching facility for the schools of Dentistry, Medicine, Nursing, Pharmacy, the basic sciences, and allied health professionals located in the Health Sciences building. It is the center, too, of statewide continuing education programs, and a referral center for physicians and other health professionals in all sections of West Virginia.

The West Virginia Legislature authorized construction of the Medical Center in 1951 and levied a penny- a - bottle tax on all soft drinks to provide basic financing. The Medical Center was planned as a single structure- Basic Sciences Building and University Hospital under one roof- on the Evansdale Campus, north of the WVU downtown campus. The Basic Sciences portion opened in 1957.

On July 1, 1984 West Virginia University Hospital was transferred from a state supported institution to a private corporation. This transaction was initiated to open financial avenues which would further expedite the continual progress towards maximum efficiency in patient care. The Board of Directors of the corporation is appointed by the Governor and consists largely of University and Hospital officials with selected citizens representing the various social functions around the state.

The corporation is now recognized as West Virginia University Hospitals, Inc.

West Virginia University Hospitals constructed a replacement facility that is known as Ruby Memorial Hospital at West Virginia University Hospitals, Inc., that they relocated into in July of 1988. This building houses the Jon Michael Moore Trauma Center and the Children's Hospital. In an adjacent building is the Chestnut Ridge Psychiatric Hospital.

The Mary Babb Randolph Cancer Center which houses the Radiation Therapy Department was opened January 15, 1990. The center is named for Mary Babb Randolph, the late wife of former U.S. Senator Jennings Randolph who died of cancer in 1981. The mission of the Cancer Center is to provide the people of West Virginia with a highly qualified cancer system that pulls together patient care, education and research resources.

The top two floors of the Center are called the Robert C. Byrd Cancer Research Lab and is involved in research in the cause and treatment of cancer. The Radiation Therapy Department is housed in the basement of the Cancer Center and was opened for operation in March of 1991.

Courses of instruction for the Radiation Therapy Education Program are currently held in the Conference Room in the Radiation Therapy Department. Instruction is closely integrated with the student's clinical education, and there is a continuous search for improved ways of teaching.

West Virginia University Hospitals is a 376 bed referral center where education of students and advancement of knowledge goes hand in hand with the best in medical care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some 50 specialties are provided for bed patients, as well as through clinics where more than 2,000 outpatients are seen weekly. Emergency room service is provided around the clock, with more than 39,000 visits recorded annually. Patients come to West Virginia University Hospital and it's clinics from all parts of West Virginia. They find expertise, state of the art equipment, and experience sometimes not available at other West Virginia hospitals in areas such as transplant surgery, bladder surgery, pacemakers, linear accelerator Radiation Therapy, state of the art neuroangiography, pediatric surgery, and cleft palate surgery. The Radiology Department is a multifunctional facility under the current direction of Chairman, Mathis Frick, M.D. The department includes Diagnostic Radiology, Nuclear Radiology, Ultrasonography, and the Radiation Oncology section. The Radiation Oncology section became its own department in January 2012 and is under the direction of the founding director, Geraldine Jacobson, M.D. It currently maintains two 6-18 MV Varian Linear Accelerators with Multi-leaf collimation and IMRT capabilities, one of which is equipped with cone beam CT, a Leskell Perfexion Gamma Knife Unit, a Toshiba LB CT Simulator, Varian Varisource HDR, B & K Ultrasound unit, a Huestis Styroformer Blockcutter, Aria Record and Verify System, and the following treatment planning systems: Nucletron, Somovsion and CAD Plan. Approximately 110,000 procedures per year are collectively performed by the four sections of the Radiology department.

Program Philosophy

The West Virginia University Hospitals Radiation Therapy Education Program is designed to provide instruction in the therapeutic application of ionizing radiation. The program is dedicated to the education of radiation therapists, in order to provide the best treatment of patients, and to provide the greatest professional growth for the student.

The objectives of the program are to provide the student with a sound educational experience, both didactic and clinical, which will prepare him/her to become a professionally competent Registered Radiation Therapist. The rapidity with which a Radiation Therapist advances in the field of Radiation Therapy depends upon his/her personality, character, ability to assume responsibility, initiative and professional preparation. It is the mission of our training program to develop each of the aforementioned qualities to the fullest extent possible in each student.

Continuing Education is encouraged by the program in an effort to motivate the technologist, or prospective technologist to keep up to date on recent technical and procedural advances in the radiation therapy field and to become familiar with other technical areas of radiation therapy into which one may wish to expand.

Yrs Attend	Medical Director	Program Director	# of students	# of grads
1975-76	Dr. Reddi	Melinda Hazy	3	3
1977-78	Dr. Reddi	Diane Martin	1	1
1978-79	Dr. Frich	Diane Martin	1	1
1981-82	Dr. Frich	Jan Pacenta	3	3
1982-83	Dr. Frich	Jan Pacenta	4	4
1983-84	Dr. Frich	Jan Pacenta	1	1
1984-85	Dr. Frich	Jan Pacenta (Jul-Nov) Tricia Royce(Dec-Jun)	4	4
1985-86	Dr. Frich	Tricia Royce	4	4
1986-87	Dr. Frich	Tricia Royce	3	3
1987-88	Dr. Frich	Tricia Royce	4	4
1988-89	Dr. Frich	Tricia Royce	4	4
1989-90	Dr. Frich	Tricia Royce	3	3
1990-91	Dr. Frich	Tricia Royce	4	4
1991-92	Dr. Frich	Tricia Royce	4	4
1992-93	Dr. Frich	Tricia Royce/ Christina Paugh	4	3
1993-94	Dr. Korb	Christina Paugh	4	4
1994-95	Dr. Korb	Christina Paugh	5	5
1995-96	Dr. Korb	Christina Paugh	4	4
1996-97	Dr. Korb	Christina Paugh	4	4
1997-98	Dr. Korb	Christina Paugh	2	2
1998-99	Dr. Watkins	Christina Paugh	4	4
1999-00	Dr. Frich	Christina Paugh	4	4
2000-01	Dr. Frich	Christina Paugh	4	4
2001-02	Dr. Frich	Christina Paugh	4	4
2002-03	Dr. Frich	Christina Paugh	4	4
2003-04	Dr. Frich	Christina Paugh	4	3
2004-05	Dr. Frich	Christina Paugh	4	4
2005-06	Dr. Frich	Christina Paugh	4	4
2006-07	Dr. Frich	Christina Paugh	4	3
2007-08	Dr. Frich	Christina Paugh	4	4
2008-09	Dr. Frich	Christina Paugh	4	4
2009-10	Dr. Frich	Christina Paugh	4	4
2010-11	Dr. Frich	Christina Paugh	4	4
2011-12	Dr. Frich	Christina Paugh	4	4
2012-13	Dr. Frich	Christina Paugh	4	4
2013-14		Christina Paugh	4	4
2014-15		Christina Paugh	4	4
2015-16		Christina Paugh	4	4
2016-17		Christina Paugh	4	4
2017-18		Christina Paugh	4	4
2018-19		Christina Paugh	4	4
				147

Total Graduates

The Program has graduated 41 classes to date awarding certificates to 147 individuals.

WVU Hospitals
Radiation Therapy Education Program
Instructional Staff
2019-20

Course Title	**Instructor**
Orientation to Radiation Therapy	Christina Paugh, M.A., R.T.(R)(T)
Quality Management & Lab	
Treatment Planning/Dose Calc I & II	
Treatment Planning/Dose Calc I & II & Lab	
Radiation Oncology	
Radiobiology	
Technical Writing (RADTT 323)	
Cardio-Pulmonary Resuscitiation	
Medical Ethics and Law	
Technical/Clinical Radiation Oncology	
Simulation Techniques in Radiation Therapy	
Pathology I & II	
CT and Imaging in Radiation Oncology	
Radiation Therapy Review Seminar	
Cross Sectional Anatomy	Becki Byrne, RT(R) CT
Dose Calculations II Lab	Patricia Jenkins, BA, R.T.(R)(T)
Radiation Physics I	Christina Paugh Tiffany Davis Mike Kowalik, Ph.D.
Radiation Physics II Radiation Therapy Physics	Mike Kowalik, Ph.D.
Radiation Therapy/Dosimetry	Brenda Darnell, B.A., C.M.D., R.T.(R)(T) Brenda Maxwell, C.M.D., R.T.(R)(T) Robert Bice, III, B.A., R.T.(R)(T) Shawn McFarland, C.M.D., R.T.(R)(T)
Mathematics Review	Andrea Nicholson, R.T. (R)
Advanced Mathematics Review	Tricia Royce, M.A., R.T.(R)(T) Mike Kowalik, Ph.D.
Patient Care and Education	Megan Radcliffe,R.T.(R)(T) Christina Paugh, M.A., R.T.(R)(T)
Medical Terminology	Michelle Wilson, R.T.(R)(T)
Operational Issues in Radiation Therapy	Tricia Royce, M.A., R.T. (R) (T)
<u>Clinical Instruction</u> Applied Therapeutic Procedures I & II	Radiation Therapy Clinical Staff T. Royce, B. Darnell. C. Paugh, P. Jenkins, K. Miller, B. Maxwell, C. McAfee, M. Wilson, B. Bice, M. Root, Hack,B., Radcliffe, M., Funkhouser, J., Swiger, H, Roach, K., Miller, A.

West Virginia University Hospitals **Radiologic Technology Education Programs**	Policy No: **2.024** Effective: **11/1989** **Reviewed: 6/2018**
Radiation Therapy	Revised: **4/2008** **4/2011**

Mission Statement

The mission of the Radiation Therapy education program at West Virginia University Hospitals is to provide quality instruction in the therapeutic applications of ionizing radiations in order to develop entry-level, technically competent professional radiation therapists who are able to meet the needs of patients and the expectations of potential employers. The program is dedicated to assuring the quality and safety of patient care in the delivery of radiation therapy treatments to the citizens of West Virginia and the surrounding region by serving as the sole radiation therapy education program in the state.

The WVUH Radiation Oncology faculty is genuinely involved with the educational process thereby providing students with an educational environment that is conducive to attaining positive learning outcomes while providing comprehensive clinical experiences and patient care opportunities.

The program is committed to helping students attain the educational goals of the program by giving them the opportunity to demonstrate the skills, knowledge, attitudes and self-direction needed to perform competently, ethically, and productively within the radiation therapy profession.

Goals

1. Students will demonstrate entry-level clinical competence in Radiation Therapy.
2. Students will practice effective communication skills.
3. Students will employ critical thinking and problem solving skills.
4. Students will exhibit professional behavior.
5. Students will integrate professional growth and development practices.

Student Learning Outcomes

1. **Students will demonstrate entry-level clinical competence in Radiation Therapy.**
    - 1.1 Students will demonstrate appropriate immobilization and positioning when preparing patients for treatment and simulation.
    - 1.2 Students will correctly operate equipment and accessories to deliver prescribed therapeutic doses.
    - 1.3 Students will demonstrate adequate clinical skills to perform as an entry level therapist.

2. **Students will practice effective communication skills.**
    - 2.1 Students will demonstrate effective verbal communication skills.
    - 2.2 Students will demonstrate appropriate written communication skills.
    - 2.3 Students will communicate and interact appropriately with patients, family and colleagues.

3. **Students will employ critical thinking and problem solving skills.**
    - 3.1 Students will assess patient needs and adapt radiation therapy procedures as required.
    - 3.2 Students will demonstrate the application of didactic knowledge in the clinical setting.

4. **Students will exhibit professional behavior.**
    - 4.1 Students will demonstrate commitment and responsibility to the radiation therapy profession.
    - 4.2 Students will demonstrate positive attitudes.
    - 4.3 Students will exhibit ethical behavior and judgment.

5. **Students will integrate professional growth and development practices.**
    - 5.1Students will evaluate their clinical performance to assess professional development.
    - 5.2Students will demonstrate dependability in the clinical workplace.
    - 5.3Students will reflect evidence of professional growth.

Clinical Education / Standards Policy

The Radiation Therapy Education Programs sponsored by West Virginia University Hospitals (WVUH) recognizes that the application of didactic material is an essential component of the education process and that the student's clinical performance is a valid indicator of professional progress and achievement. In light of this, students are required to achieve and maintain certain levels of clinical performance and proficiency in the Applied Therapeutic Procedures Courses (RADTT 420 and RADTT 430). This policy serves to identify the structure and standards by which the clinical education process is administered.

I. Clinical Education Process:

The following describes the progressive procedures employed in achieving clinical competence:

a. Didactic Instruction
After matriculation into the program, students are progressively introduced to the various positioning and/or technical requirements for each radiation therapy procedure through didactic instruction and testing during Semesters I & II.

b. Clinical Practice/Student Clinical Log Sheets
Concurrent with didactic instruction and under direct supervision, the student will position, plan and treat the patient, calculate and record doses, check the patient's treatment records, and observe the patient in a routine follow-up physician visits. These clinical activities are to be recorded daily by the student therapist in the Trajecsys electronic clinical report system via an internet connection.

c. Clinical Competency Examination
After observing and assisting the radiation therapist with an appropriate number of radiation therapy set-ups (generally a minimum of 3 or more), a clinical competency exam will be administered for each procedure identified on the ARRT clinical checklist for Radiation Therapy Procedures. Competency categories include but are not limited to the procedures from the following sites: Brain, Head and Neck, Chest, Breast, Abdomen, Pelvis, Skeletal, electron fields, general patient care procedures, simulation procedures, Dosimetry, treatment accessory devices and participatory procedures.

d. Comprehensive Competency Examination
After successful completion of a Clinical Competency examination in a specific category, the Program Director or Clinical supervisor may administer a comprehensive competency exam to ensure that proficiency and accuracy is being maintained. A comprehensive competency exam will be administered at a time and on a patient designated by the Program Director or Clinical Supervisor. A minimum of 2 comprehensive competencies per semester per student will be randomly conducted. Once a competency has been achieved, the student must maintain that same level of competency or higher for that specific procedure. Failure to maintain this level will result in the competency being revoked and require the student to re-evaluate the procedure and achieve competency status again.

Refer to the following for clarification of specifics depicted in the policy:

a.Direct Supervision of Students
b.Applied Therapetic procedures I and II
c.ARRT Clinical Competency Procedures Checklists
d.Trajecsys Student clinical logs and competencies

II. Clinical Grade Calculation

The student's clinical grade consists of several components, each utilizing a different mechanism to assure a complete and comprehensive evaluation of clinical performance. The following components and weighted averages are utilized:

Component	Weighted Average
Student Log Sheets	10%
Clinical Competency	40%
Monthly Evaluations	25%
Comprehensive Competency	15%
Program Director Evaluation	10%
	100%

Each clinical grading component is explained in both Applied Therapeutic Procedures Courses (RADTT 420 and RADTT 430).

III. Clinical Grading Scale

The following grading scale will be utilized as an objective evaluation mechanism for representing the student's clinical grade and performance.

Percentage Grade	Letter Grade	Quality Points
100-93%	A	4.0
92% - 86%	B	3.0
85% - 78%	C	2.0
77% - 70%	D	1.0
< 70%	F	0.0

IV. Clinical Grade Standard (minimum)

Each student is required to achieve a minimum overall weighted clinical average of **86% (B Letter Grade)** at the end of each semester in order to successfully complete the clinical education component of the program. Due to the progressive nature of the clinical education component, no provisions are provided for repeating a clinical level. Each clinical education level must be completed before advancing to the subsequent semester; therefore, students who fail to achieve an **86% (B Letter Grade)** weighted clinical average at the end of each semester will be dismissed from the program. Students are counseled by the Program Director regarding their clinical progress at mid-term, semester end, and/or as needed; however, it is the student's responsibility to maintain awareness of their clinical progress at all times.

Student Supervision Policy

This Policy serves to identify the current guidelines for supervision of student radiation therapists as stated in the current *Standards for an Accredited Educational Program in Radiation Therapy*.

In support of professional responsibility for provision of quality patient care and radiation protection, all clinical assignments and all radiation therapy procedures performed by students shall be under the direct supervision of a qualified practitioner (e.g. registered radiation therapist, credentialed medical physicist, licensed radiation oncologist, licensed nurse) during all aspects of the procedure. Students must always be directly supervised during all patient procedures.

Direct Supervision is defined as student supervision by a qualified practitioner who is:

i. Physically present during the conduct of the procedure and
ii. Reviews and approves the procedure and/or image
iii. Supervision of students over closed-circuit monitors is not acceptable

Guidelines:

The parameters of direct supervision are as follows:

1. A qualified practitioner reviews the procedure in relation to the student's achievement.
2. A qualified practitioner evaluates the condition of the patient in relation to the student's knowledge
3. A qualified practitioner is present during the conduct of the procedure
4. A qualified practitioner reviews and approves the procedure. This will be documented by the therapist cosigning their initials to all radiation therapy procedures performed by student therapist
5. A qualified practitioner ensures all treatment fields and portal images have been completed. In no case are students permitted to exit out of the electronic patient chart.
6. A qualified practitioner reviews and approves all patient positioning shifts (including auto shifts) before the patient is treated.

_____ _____

Program Director /Education Coordinator Date

Orientation Policy

Policy:

It is the policy of the West Virginia University Hospitals Radiologic Technology Education Program in Radiation Therapy to provide basic hospital and radiation oncology department orientation information to new students. The two-day orientation is mandatory for all students; however, in the extraordinary event that a student would not be able to attend, he or she will be required to use their personal time off in accordance with the Attendance Policy. PDO time in the amount of 8 hours for the first orientation day and 4 hours for the second day will be charged. The student is solely responsible for obtaining any information missed during new student orientation.

_____ _____

Education Coordinator Date

Attendance Policy

A student's daily attendance is vitally important in order for them to maintain satisfactory didactic and clinical performance. Students that miss exceptional amounts of clinic time will find it difficult to acquire the exams needed to fulfill their clinical education requirements. Students need to realize that poor attendance during their education can have a negative effect on their future. Employers tend to be wary of student applicants that have a record of excessive absenteeism. It is natural to relate absenteeism with a poor work ethic and a lack of commitment to the profession.

Personal Days Off: (PDO)

Personal days off (PDO) may be utilized for unscheduled absences (illness, personal emergency, etc.) and scheduled absences (job interviews, doctor appointments, etc.).

***Twelve-month programs*:**

The student will be allotted six (6) personal days off (48 hours PDO) for a twelve-month program. In addition, each school year will include three (3) weeks of leave to include: 2 weeks over the Christmas / New Year holiday, and one week in the spring.

Eighteen-month programs:

The student will be allotted nine (9) personal days off (72 hours PDO) for an eighteen-month program. In addition, each school year will include four (4) weeks of leave to include: 2 weeks over the Christmas / New Year holiday, one week in June, and a final week in the fall which is determined by the education coordinator.

Scheduled & Unscheduled Absences:

1. It is the student's responsibility to notify both the Program Director and Clinical Rotation site when calling to report off for illness or other personal emergencies. Notification must be received by a Program Official no later than 30 minutes prior to the beginning of the student's assigned shift. Failure to call a Program Official in a timely manner will result in the student receiving an unexcused absence for that day. Students are required to leave a message on the phone mail system of the Program Director and the clinical rotation site.

2. In addition to calling off, students must document their absence by completing a Personal Leave Request form in Trajecsys. Comp time may not be utilized for unscheduled absences.

3. Students that miss consecutive days due to an illness will be charged only one (1) personal day off (8 hours PDO) for every three (3) days of absence, providing the student has a valid medical excuse from a physician stating the amount of time that the student is excused. The provision does not apply to time missed due to illnesses or incapacitation related to elective procedures or surgeries. Please refer to the Medical Leave of Absence policy regarding extended illnesses.

4. PDO and comp time shall be granted in minimum increments of 1 hour for both scheduled and unscheduled absences, unless previously approved by the Program Director.

5. Students requesting time-off for non-emergent reasons should pre-schedule PDO or comp time with program officials by the end of their shift at least one (1) day prior to the requested time off. Students should complete a

Personal Leave Request form in Trajecsys and inform the Program Director as soon as the form has been submitted to ensure prompt review.

Excessive Absenteeism

This policy serves to identify the procedure and criteria implemented when a student exceeds their allotted number of personal days off (PDO).

1. Excessive absenteeism will not be tolerated. If a student exhausts their allotted PDO days, they will be subjected to the following disciplinary action.

Twelve-month programs*:*

a. If the 6 allotted PDO days are exhausted, the student will receive documented counseling regarding their attendance and 1 point will be deducted from their overall clinical grade.

b. If 2 additional days are missed (total 8), the student will receive a second formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 3).

c. If 2 more additional days are missed (total 10), the student will receive a final formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 5).

d. If the total amount of days absent exceeds 10, then the student will be dismissed from the Program if any additional absences occur. Students will be evaluated on an individual basis as to the circumstances causing the absenteeism.

Eighteen-month programs:

a. If the 9 allotted PDO days are exhausted, the student will receive documented counseling regarding their attendance and 1 point will be deducted from their overall clinical grade.

b. If 2 additional days are missed (total 11), the student will receive a second formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 3).

c. If 2 more additional days are missed (total 13), the student will receive a final formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 5).

d. If the total amount of days absent exceeds 13, then the student will be dismissed from the Program if any additional absences occur. Students will be evaluated on an individual basis as to the circumstances causing the absenteeism.

2. In the event that a student exceeds their allotted PDO days, their clinical education will be extended beyond graduation so that all clinical requirements can be satisfied. However, the clinical education process cannot be extended beyond 5 days after graduation. All absences over the allotted PDO days will be considered as unexcused absences and will result in documentation of unsatisfactory attendance on the final transcript.

3. In accordance with the Standards of an Accredited Educational Program in Radiologic Sciences, with regard to the maximum hours of clinical and didactic instruction, students will not be permitted to make-up their excessive missed time by extending their hours in clinic on a daily basis.

Unexcused absences

Unexcused absences are classified as the following:

1. Leaving the facility grounds without a program official's permission.
2. Leaving your assigned clinical area without program officials or a staff technologist's permission.
3. Failure to notify program officials prior to your assigned shift of an unscheduled absence.
4. Absences that occur as a result of disciplinary action (e.g. suspension) or those in excess of the allotted 6 PDO days for twelve month programs or 9 PDO days for eighteen month programs.

In the event that a student incurs an unexcused absence, the Disciplinary Action policy will be implemented. It is mandatory for all students to make-up, after graduation, any time missed as a result of an unexcused absence so that all clinical requirements can be satisfied. As with the excessive absenteeism policy, the clinical education process cannot be extended beyond 5 days after graduation for unexcused absences.

Tardiness

Students are required to be in their assigned clinical or didactic area and fully prepared to begin the daily clinical assignments prior to or by their designated starting time. Students should be aware that falsifying attendance records is grounds for immediate dismissal.

Tardiness is subject to the following guidelines and provisions:

a. Tardiness is considered as any arrival time that is more than 7 minutes past the designated start of the student's shift.

b. Tardiness beyond 30 minutes will result in the student being charged 0.5 days (4 hours) of PDO.

c. Failure to notify program officials 1 hour beyond the designated time of arrival will result in the student receiving a written warning.

d. Excessive tardiness will not be tolerated and will result in a reduction in Clinical Points which will negatively affect the student clinical grade. Continued abuse will additionally result in disciplinary action and will result in documentation of "unsatisfactory attendance" on the final transcript.

e. Exceptions to this policy will be at the program official's discretion and will be limited to unforeseen events.

Tardiness will be governed by the following limits and corresponding corrective actions:

Twelve-month programs:

a. Upon the occurrence of three incidences of tardiness, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.

b. Upon the occurrence of three additional incidences of tardiness (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (total 3).

c. Upon the occurrence of three additional incidences or tardiness (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (total 5). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.

d. Upon the occurrence of one additional incident of tardiness (total of 10), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

Eighteen-month programs:

a. Upon the occurrence of three incidences of tardiness, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.

b. Upon the occurrence of three additional incidences of tardiness (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (3 total).

c. Upon the occurrence of three additional incidences of tardiness (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (5 total). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.

d. Upon the occurrence of three additional incidences of tardiness (total of 12), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

Funeral Leave

Students will be given a maximum of three (3) days excused absence for deaths in their immediate family. Immediate family shall include: husband, wife, child, mother, father, brother, sister, mother-in-law, father-in-law, and grandparents. Exceptions to this policy may be granted only by the Program Director.

Students needing to utilize funeral leave will be required to submit a Leave Request form in the Trajecsys Report System and notify a program official of submission as soon as possible, prior to being absent.

Military Leave

West Virginia University Hospitals supports the Military Services of the Government of the United States and provides the following provisions for students serving in the Military Reserves during their enrollment in the program.

a. Students serving in any branch of the U.S. Military Reserves are allotted 2 weeks (10 days) of leave per academic year to fulfill their required military commitment. Students that miss additional time (>10 days) due to military service will be required to utilized personal leave or arrange an acceptable time frame in which to make-up the time missed so that the program's clinical requirements can fulfilled. Make-up time is subject to the Education Coordinator's discretion and subsequent approval.

b. Students are responsible for all didactic and clinical course materials presented during their absences related to military service.

c. In the event that a student is called-up to active military duty, the program will reserve a position for that student so that they can be re-enrolled upon the completion of their active duty assignment.

Vacation and Holidays

Twelve-month programs:

Students are granted three (3) weeks of vacation during their 12 month enrollment in the Program. Vacations are scheduled as two (2) weeks over Christmas/New Year's and one week in the spring. Program officials reserve the right to alter vacation dates.

Students are granted seven (7) holidays per year which include the following:

New Year's Day
Memorial Day
Independence Day (July 4th)
Thanksgiving AND Friday after Thanksgiving
Labor Day
Christmas

Eighteen-month programs:

Students are granted one (1) week of vacation during each semester enrolled in the Program. Vacations are scheduled as two (2) weeks over Christmas/New Year's, one (1) week in June and the final week of vacation being held in the fall. The final week in the fall is determined by the education coordinator. Program officials reserve the right to alter vacation dates.

Students are granted seven (7) holidays per year which include the following:

New Year's Day
Memorial Day
Independence Day (July 4th)
Thanksgiving AND Friday after Thanksgiving
Labor Day
Christmas

Attendance Documentation

Students are required to document their attendance by using the Trajecsys Report System.

Using PDO or Compensatory Time:
Students desiring to use PDO or Compensatory Time will be required to submit a Leave Request form in the Trajecsys Report System and notify a program official of submission by the end of their shift at least one (1) day prior to the requested time off. The exact number of hours to be taken must be marked, appropriate designation must be selected (PDO, comp, military, medical, funeral), and student must provide time of day they wish to use their time if not a whole day (i.e. 2 hours PDO, 2pm-4pm, leaving early). A comment box will be provided on the leave request form for further information, if necessary.

Interview Day:
Students desiring to use the one allotted Interview day will be required to submit a Leave Request form in Trajecsys by the end of their shift at least one (1) day prior to the interview date. The student will also be required to complete necessary forms which can be located and printed from the "Documents" section of Trajecsys. These forms must be signed by a member of the interview committee and returned to the Program Director the next school day immediately following the interview. If the signed document is not returned, the absence will be considered unexcused and PDO will be taken. If additional interview days are needed, PDO must be used.

Policy Enforcement:
Accurate evaluation and interpretation of student attendance can only be accomplished if students are methodical and precise in their documentation. For this reason, the following guidelines have been established and will be strictly enforced.

1. Each student must clock in and clock out in the Trajecsys Report System to document daily attendance times upon their arrival and departure of clinical duties.
2. Students that fail to document accurately and timely will be counted absent until they notify the designated Program official. All time not accounted for (missed documentation) will be deducted from the student's PDO balance and disciplinary action may be enforced in accordance with the excessive absenteeism policy.
3. Any student failing to properly utilize the attendance system (failing to clock in and clock out in Trajecsys, failing to comment on early dismissals, etc.) will be subject to the following:

Twelve-month programs:

a. Upon the occurrence of three incidences of failing to log attendance, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.

b. Upon the occurrence of three additional incidences of failing to log attendance (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (total 3).

c. Upon the occurrence of three additional incidences of failing to log attendance (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (total 5). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.

d. Upon the occurrence of one additional incident of failing to log attendance (total of 10), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

Eighteen-month programs:

a. Upon the occurrence of three incidences of failing to log attendance, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.

b. Upon the occurrence of three additional incidences of failing to log attendance (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (3 total).

c. Upon the occurrence of three additional incidences of failing to log attendance (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (5 total). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.

d. Upon the occurrence of three additional incidences of failing to log attendance (total of 12), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

4. Logging attendance must be performed on an approved hospital computer. Logging attendance with a mobile device is unauthorized unless approved by a program official under special circumstances.

The Program Director has the discretion to make changes to this policy at any time based on the situation.

_____ _____

Education Coordinator Date

Pregnancy Policy

It is the policy of the West Virginia University Hospitals Radiologic Technology Education Program in Radiation Therapy to provide reasonable radiation protection to student therapists occupationally exposed to radiation. Pregnant students are expected to follow the additional protective measures detailed below which have been developed to restrict the fetal radiation dose below the maximum permissible dose (MPD) as recommended by the National Council on Radiation Protection (NCRP) and the Nuclear Regulatory Commission (NRC).

Furthermore, it is the policy of this Program to grant a leave of absence, upon verification of pregnancy, to students who do not wish to take the biological risks to the fetus associated with prenatal radiation exposure.

1. Upon initial enrollment to the Program, all female students will receive an orientation/in service in regard to prenatal radiation exposure as currently recommended by the National Council on Radiation Protection (NCRP) and the Nuclear Regulatory Commission (NRC). This orientation/in service will be given by a Radiation Safety Officer during student orientation week.

2. Upon medical verification of her pregnant condition, disclosure of the said condition to program officials is the student's responsibility and is to be initiated voluntarily. Students have to right to refuse disclosure of medical information; however, in the event that a student chooses not to disclose information regarding pregnancy, the student is acknowledging that they are assuming all responsibly for their condition and the potential complications to themselves or to the fetus that may arise.

3. Upon notification by the student that a pregnant condition exists, the Education Coordinator will contact the Radiation Safety Officer to arrange for the student to review her previous radiation exposure history and to review protective actions as well as the risks associated with radiation exposure to the fetus. The student shall be issued an additional dosimeter badge that is to be worn at the level of the pelvis to monitor fetal dose. The student also shall read appendix to NRC 8.13-3 (instruction concerning prenatal radiation exposure). The student shall contact the Radiation Safety Officer within five (5) days of notifying the Education Coordinator of her pregnancy.

4. Upon medical verification that a pregnancy exists, and after consultation with the Radiation Safety Officer, the Education Coordinator will offer three options to the student.

Option # 1 - Leave of Absence during pregnancy.

If the student so decides, she may elect to leave the Program during the pregnancy period.

a. If the student decides to accept this option and leave the Program, she must provide written notification to the Education Coordinator and the Radiation Safety Officer.

b. The student shall be permitted to re-enter the Program at the beginning of the corresponding semester in which she left. (i.e., if the student left mid-way through the second semester of the two semester term, she would be required to re-enter the program at the beginning of the second semester the following year.

c. All didactic and clinical course work must be completed prior to graduation from the Program

Option # 2 - Remain in Program throughout pregnancy. If the student so decides, she may continue in the Program under the following requirements:

a. The student shall review and implement radiation safety practices as outlined by NRC appendix 8.13-3

b. The student shall wear exposure monitoring devices as determined by the Radiation Safety Officer's recommendation.

c. The student shall adhere to the Program's attendance policy.

d. The student shall participate in all scheduled clinical rotation areas as assigned provided the monthly dose does not exceed 50 mRem per month to the fetal dose monitor.

e. If the monthly dose meets or exceeds 50 mRem in any one month period, the following activities will be reduced or restricted:

i. The student shall not participate in Brachytherapy source implant procedures.
ii. The student shall not participate in the simulation of patients who have been implanted with radioactive nuclides, (i.e., I-125, Ir-192, Cs-137, etc.)
iii. The student shall not participate in any work in radiation storage areas including loading of or removal of, or transporting of after loading nuclides.

f. All didactic and clinical course work must be completed prior to graduation from the Program

Option # 3 - Remain in Program throughout pregnancy with no special provisions.

If the student so decides, she may continue in the program with no special provisions or considerations. If the student chooses this option, the student is acknowledging that she is assuming all responsibly for her condition and the potential complications to themselves or to the fetus that may arise.

a. The student shall participate in all scheduled clinical rotation areas as assigned.

b. All didactic and clinical course work must be completed prior to graduation from the Program

c. The student must adhere to the Programs attendance Policy

5. The Education Coordinator shall document the student's decision in regard to the three options described above.

6. The student shall complete and sign the attached form acknowledging receipt of information and associated documentation in regard to the pregnancy. All documentation shall be entered into the student's permanent personal file.

Withdrawal of Declaration of Pregnancy

The student has the right to withdraw their declaration of pregnancy due to birth or other complications with pregnancy and must fill out the attached Withdrawal of Declaration of Pregnancy form. By filling out the form, the student acknowledges that their medical condition (i.e., pregnancy) no longer exists.

All documentation shall be entered into the student's permanent personal file.

Signed: _____ Date: _____
Program Director/Education Coordinator

Hours of Academic and Clinical Education

In accordance with the *Standards for an Accredited Educational Program in Radiological Sciences*, the radiation therapy education program maintains that the maximum hours of clinical and academic hours shall not exceed 40 hours per week.

Student therapists will attend clinical and academic course work within a 40 hour work week. Routine educational assignments will require the student to be in attendance Monday through Friday, from 8:00 a.m. to 4:30 p.m. (Five 8 hour days)
Students will not be scheduled to clinical rotations on weekends or designated student holidays.

When in attendance, students are expected to attend all didactic and clinical rotations throughout the day. "Cutting" of class is not permitted. Students will be assigned to participate in clinical rotations that will begin at 7:00 a.m. in the second semester to ensure that they are able to achieve competency in daily Q.A. and warm-up procedures for the Linear accelerators, Simulator and C.T. Scanner. When assigned to these early rotations, the student will have the option of leaving daily at 3:30 p.m. or taking early dismissal on Friday of that same week so that they will not exceed the 40 hour week. A 1 month clinical rotation at FRCC is required in the second semester.

Attendance Documentation Policy

Policy:
Students are required to document their attendance by completing attendance logs in Trajecsys report systerm. The student is required to complete the log daily with their time in and out of scheduled program time. The student will be resposnsible for ensuring their logs are accurate and up to date.

Using PDO or Compensatory Time:
Students desiring to use PDO or Compensatory Time will be required to submit a Leave of Request Form to a program official prior to the date or time of their absence. The date and the exact amount of time the student will be absent must be included.

Policy Enforcement:
Accurate evaluation and interpretation of student attendance can only be accomplished if students are methodical and precise in their documentation. For this reason, the following guidelines have been established and will be strictly enforced.

1. Each student must log their attendance-in and attendance-out time in the attendance section in Trajecsys upon their arrival and departure of clinic/classroom duties.
2. Students that fail to document accurately and timely will be counted absent until they notify the Program Director or Clinical Supervisor for that day. All time not accounted for (missed documentation) will be either deducted from the student's PDO balance or replaced by compensatory time if available.
3. Any student failing to properly utilize the attendance time in the Trajecsys system (failing to log out when leaving, forgetting to log in/out) will be subject to the Disciplinary Action policy.

Transfer Credit /Advanced Placement and Part-Time Student Policy

This policy serves to identify the Program's philosophy relative to transfer of credit, advance placement of students and part-time student attendance.

With respect to the following considerations:

1. The Radiation Therapy program length of 12 months;
2. The specificity of the course content;
3. The precise correlation between the didactic curriculum and clinical education;
4. The sequential and progressive nature of the curriculum format;
5. The competitive nature of the enrollment process; and
6. The operational hours of the clinical facility.

The Radiation Therapy program at West Virginia University Hospitals does not make provisions for transfer credit, advance placement status, or part-time enrollment.

Graduation Requirements

Students enrolled in the Radiation Therapy Program must complete the following to be eligible for graduation and receive authorization from program officials that they have completed the necessary didactic and clinical criteria to sit for the ARRT certification examination in Radiation therapy.

1. Achieve a passing grade (78% or >) in each didactic course.

2. Achieve a passing grade (86% or >) in each clinical course (Applied Therapeutic Procedures I and II) by the end of each semester.

3. Successfully complete all clinical competency requirements in accordance with published clinical education standards policy.

4. Complete the published number of clinical hours within the provisions established by the program's attendance policy.

5. Demonstrate critical thinking, effective communication, and problem solving skills within the framework of the education structure.

6. Demonstrate ethical and professional behavior within the standards of the institution and the ARRT's code of ethics.

7. Demonstrate completion of an Associate's degree (or higher) from an accredited post-secondary institution in order to be eligible to sit for the primary certification exam in Radiation Therapy administered by the ARRT. The degree can be in any field or discipline.

8. Meet all financial obligations to the Program and the Institution.

Student Guidelines for Utilization of Compensatory Time

The following policy and procedure serves to identify the requirements and guidelines for the student to obtain approval to be absent from the program through utilization of compensation time earned.

Requirements and Guidelines:

1. Compensation time earned by the student may not be taken during scheduled didactic course hours. Exceptions will be made only through approval by the program director.

2. The student must obtain prior approval to utilize compensation time by submitting a Leave Request Form in Trajecsys and will be verified by the Program Director or a Program Clinical Supervisor. Program officials will approve 8 hours of compensation time off no later than 24 hours prior to the date the student requests to be off. In cases where the student is requesting less than 8 hours off, program officials may approve compensation time on the day of request.

3. Failure to receive prior approval from the Program officials and/or failure to present the approved Personal Leave Request Form prior to the time of utilization by the student, will result in Program officials recording an unexcused absence on the student's attendance record.

4. The student may not receive approval to utilize compensation time earned via telephone unless the following circumstances exist:
    a. Severe weather conditions or transportation problems. A detailed explanation of the situation or circumstances must be provided by the student.
    b. Student illness where the student has exhausted allotted number of personal leave days.
    c. Emergency situation requiring the student's presence. A detailed explanation of the circumstances must be provided by the student.

In reference to the aforementioned circumstances, the Program official's professional opinion and judgment will dictate the final decision for approval or non-approval.

5. Without exception, students who are absent during scheduled program hours without notifying program officials of their intent to utilize personal leave or without receiving prior approval to utilize compensation time, will be assessed an unexcused absence.

    a. Unexcused absences must be accounted for following formal graduation of the class in order to receive the Program certificate and the Program Director's signature on the authorization form required to permit the student to sit for the American Registry of Radiologic Technologists examination.

Course Lecture Sessions Make-up

The program officials and instructors will abide by the following procedure for permitting students to make-up course work missed as a result of being absent from a scheduled lecture session. This policy serves to eliminate, as much as possible, any potential advantage that a student may achieve by being absent from a scheduled lecture session and thereby obtaining a greater amount of study and/or preparation time, for the scheduled activities of the class, than those students in attendance.

1. The student is solely responsible for the lecture material covered and for making up any examinations, quizzes, homework assignments, etc. which occurred during their absence from the lecture session.

2. All examinations and/or quizzes must be made up on the student's first regular scheduled day of attendance (Monday thru Friday) following their absence from the lecture session.

The student must follow the following procedure:

   a. Contact the course instructor by 9 am on the day of your return and inform the instructor that you are presenting yourself to make-up the missed examination and/or quiz.

   b. In the event that the course instructor is not available, contact the program director or program clinical supervisor immediately and inform him/her to this affect.

   c. Instructors may submit the examination and/or quiz to a program official who will proctor the make-up session for the instructor. Instructors who anticipate that they will not be available for the make-up session must arrange in advance for the program director and/or clinical supervisor to proctor the session.

3. Failure of the student to follow the aforementioned make-up guidelines imposes a mandatory requirement upon the instructor to record a percentage grade of zero for the examination and/or quiz.

4. A student who fails to meet an assignment (e.g. term paper) deadline as a result of being absent on the deadline day must submit the assignment on the first regular scheduled day of attendance following the absence. The equivalent of a 10% reduction in grade will be imposed as a penalty for missing the deadline. If the student fails to submit the assignment as described above, the instructor is required to enter a percentage grade of zero for the assignment.

This policy and procedure will be followed in all cases except where the Program Director and Instructor have agreed to waive this policy because of special extenuating circumstances.

WVU Medicine

Radiologic Technology Education Programs

Radiation Therapy

Course / Clockhour Profile

Semester I

Course #	Title		Clock hours
RADTT 310	Orientation to Radiation Therapy		21
RADTT 311	Principles & Practice of Radiation Oncology		30
RADTT 312	Simulation Techniques and Lab		6
RADTT 313	Radiation Physics I (Rad Safety/Biology/Atomic/Nuclear)		40
RADTT 315	Dose Calculations/Treatment Planning I		32
RADTT 316	Medical Ethics & Law		8
RADTT 317	Medical Terminology		5
RADTT 318	Math Review		10
RADTT 319	CT & Imaging		8
RADTT 322	Pathology I (General)		12
RADTT 323	Technical Writing		8
RADTT 324	Methods of Patient Care		16
RADTT 325	Advanced Math Review		6
RADTT 300	Educational Seminars		20
		Total Didactic	**222**
RADTT 420	AppliedTherapeutic Procedures I: Clinical		618
		Total Clinic	**618**
	Semester I Educational Clockhour Total		**840**
Holidays	July 4th, Labor Day, Thanksgiving x2	**Holiday**	
Vacation	Christmas & New Years Week	**Vacation**	
	Semester I Clockhour Total		**840**

Semester II

Course #	Title		Clock hours
RADTT 331	Principles & Practice of Radaition Oncology		39
RADTT 332	Simulation Techniques and Lab		6
RADTT 333	Radiation Physics II (Radiation Therapy Physics)		42
RADTT 334	Cross Sectional Anatomy		25
RADTT 335	Dose Calculations/Treatment Planning II		20
RADTT 336	Computers in Dosimetry I		20
RADTT 337	Operational Issues in Radiation Therapy		10
RADTT 338	Pathology II (Neoplasia)		10
RADTT 341	Radiation Biology		32
RADTT 344	Quality Management & Lab		16
RADTT 347	Radiation Therapy Review Seminars		80
RADTT 400	Educational Seminars		20
		Total Didactic	**320**
RADTT 430	Applied Therapeutic Procedures II: Clinical		485
		Total Clinic	**485**
	Semester II Educational Clockhour Total		**805**
Holiday	Memorial Day	**Holiday**	
Vacation	Spring Break	**Vacation**	
	Semester II Clockhour Total		**805**

Total Didactic I & II	**542**
Total Clinic I & II	**1103**
Complete Total	**1645**

Revised 11/2017

WVUH Radiation Therapy Education Program

Course Descriptions

RADTT 310 Orientation to Radiation Therapy

21 Clockhours

Content is designed to provide student with an overview of the foundations in radiation therapy and the practitioner's role in the health care delivery system. Principles, practices and policies of the educational program, health care organizations, principles of radiation and health safety, introduction to clinical oncology and radiation treatment rationale and professional responsibilities of the radiation therapist will be discussed and examined. Content is further designed to provide an overview of cancer and the specialty of radiation therapy. The historic and current aspects of cancer treatment will be covered. The roles and responsibilities of the radiation therapist will be discussed. In addition, treatment prescription, techniques and delivery will be covered.

Semester I (1st Quarter)

RADTT 311 Principles & Practice of Radiation Oncology

RADTT 331 69 Clockhours (30 Semester I and 39 Semester II)

Content is designed to examine and evaluate the management of neoplastic disease using knowledge in arts and sciences, while promoting critical thinking and the basis of ethical clinical decision making. The epidemiology, etiology, detection, diagnosis, patient condition, treatment and prognosis of neoplastic disease will be presented, discussed and evaluated in relationship to histology, anatomical site and patterns of spread. The radiation therapist's responsibility in the management of neoplastic disease will be examined and linked to the skills required to analyze complex issues and make informed decisions while appreciating the character of the profession

Semester I & II (1st, 2nd, 3rd and 4thQuarter)

RADTT 312, 332 Simulation Techniques & Lab

12 Clockhours (6 hours each semester)

Course content is designed to provide sequential development, application, analysis, integration, synthesis and evaluation of the concepts and theories in radiation therapy treatment field design.This course will involve instruction, demonstration and participation in immobilization procedures, patient positioning and simulation with the aid of an anthropomorphic phantom. This course runs concurrently with Radiation Oncology.

Semester I & II (1st, 2nd, 3rd and 4thQuarter)

RADTT 313 Radiation Physics I: Radiation Protection, Biology, Atomic/Nuclear

40 Clockhours

Content is designed to present basic principles of radiation protection and safety for the radiation therapist. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations are incorporated. Specific responsibilities of the radiation therapist are discussed, examined, performed and evaluated. Additionally, this course will cover the principles of nuclear physics, providing the student with the understanding of natural and artificial radioactivity, the methods of disintegration, decay schemes, transient and secular equilibrium, nuclear fission and fusion, and other Principles related to the field of Radiation Therapy.

Semester I (1st and 2nd Quarter)

RADTT 315 Dose Calculations/Treatment Planning I

32 Clockhours

Provides the student technologist with an understanding in the mechanics of therapeutic dose calculations, and in the physics principles on which they are based. Content is designed to establish factors that influence and govern clinical planning of patient treatment. This encompasses isodose descriptions, patient contouring, radiobiologic considerations, dosimetric calculations, compensation and clinical application of treatment beams. Optimal treatment planning is emphasized along with particle beams.

Semester I (1st and 2nd Quarter)

RADTT 316 Medical Ethics and Introductory Law

8 Clockhours

Content is designed to provide sequential development, application, analysis, integration synthesis and evaluation of concepts and theories in radiation therapy. Through structured sequential assignments in clinical facilities, concepts of team practice, patient-centered clinical practice and professional development shall be discussed, examined and evaluated. Content is further designed to develop and use problem solving and critical thinking skills in discussion of the sources of law, causes of action and litigation processes related to the professional practice of radiation therapy. The interrelatedness of standards of care, law, ethical standards and competence will be examined.

Semester I (1st Quarter)

RADTT 317 Medical Terminology

5 Clockhours

Content is designed to establish a foundation in the standardized language of medical practice, including its abbreviations and symbols. A word building system will be presented preparatory to reading, understanding, interpreting and applying physician prescriptions to radiation therapy and related services.

Semester I (1st Quarter)

RADTT 318 Math Review

10 Clockhours

This course will cover the basic mathematical functions necessary to understand the principles of X-ray physics. The course will include fractions, decimals, algebra review, factoring, proportions, logarithms, graphs, calculations, geometric principles, and basic trigonometry.

Semester I (1st Quarter)

RADTT 319 Computed Tomography & Imaging in Radiation Oncology

8 Clockhours

Content is designed to establish a knowledge base in factors that govern and influence the production and recording of radiographic images for patient simulation, treatment planning and treatment verification in radiation oncology. Radiation oncology imaging equipment and related devices will be emphasized. Content is further designed to provide students with an exposure to principles related to computed tomography (CT) imaging.

Semester I (1st Quarter)

RADTT 322 Pathology I (General)

12 Clockhours

The course content is presented in two parts: general pathology and neoplasia. General pathology introduces basic disease concepts, theories of disease causation and system-by-system pathophysiologic disorders most frequently encountered in clinical practice. Neoplasia provides an in-depth study of new and abnormal development of cells. The processes involved in the development and classification of both benign and malignant tumors and site-specific information on malignant tumors is presented.

Semester I (2nd Quarter)

RADTT 323 Technical Writing

8 Clockhours

A directed study course which provides students an opportunity to pursue an area of particular interest by the research, design and construction of a technical paper. Each student is required to write a paper on a disease topic and it's treatment or a physics topic.

Semester I (2nd Quarter)

RADTT 324 Methods of Patient Care and Education

16 Clockhours

To introduce nursing procedures and techniques utilized in the care of cancer patients as a function of the Radiation Therapy Technologist. Emphasis will be placed on the patient's physical and psychological conditions, as well as factors influencing the general health of the patient during and following a course of radiation therapy.

Semester I (2nd Quarter)

RADTT 325 Advanced Mathematics Review

6 Clockhours (semester I)

This course is designed to include a study of polynomial, exponential, logarithmic and trigonometric functions and their applications, ruler and compass constructions, plane analytic geometry, Cartesian and polar coordinates, Law of Sines, combinations and permutations algebra of sets and normal distribution.

Semester I (2nd Quarter)

RADTT 300, 400 Educational Seminars

40Clockhours (20 each semester)

A discussion of current literature, new procedures, new radiation therapy equipment, trends in radiation therapeutic methodology, and special presentations by guest lecturers. This course also includes active student participation in chart rounds.

Semester I & II (1st, 2nd, 3rd, 4th Quarter)

RADTT 420 Applied Therapeutic Procedures I

610 Clockhours

This course provides the student with experience in the clinical facility, participating in the duties performed by a radiation therapy technologist. The student will be present for the initial clinical evaluation of the patient throughout the treatment planning and follow-up of the patient throughout the course of treatment. Under supervision, the student will position, plan and treat the patient, calculate and record doses, check the patient's treatment records, and observe the patient in a routine follow-up.

Semester I (1st and 2nd Quarter) - Radiation Oncology Staff

RADTT 333 Physics II: Radiation Therapy Physics

42 clockhours

This is a continuing course of Radiation Physics I and II which will cover the atomic structure, the interaction of ionizing radiation matter, therapy equipment that in use in the past and present, measurement of exposure, calibration of the equipment, measurement of absorbed dose, dose calculations, treatment planning, brachytherapy, and a review of nuclear physics and protection. A study of the different types and uses of brachytherapy sources their physical properties, calculations, records, and their application in interstitial, intracavitary and surface implant procedures.

Semester II (3rd and 4th Quarter)

RADTT 319 Quality Management & Lab

16 Clockhours

Content is designed to focus on the evolution of quality management (QM) programs and continuing quality improvements in radiation oncology. Topics will include the need for quality assurance (QA) checks; QA of the clinical aspects and chart checks; film checks; the various types of evaluations and tests performed on simulators, megavoltage therapy equipment and therapy planning units; the role of radiation therapists in quality management programs; legal and regulatory implications for maintaining appropriate QM guidelines as well as the role computers and information systems serve within the radiation oncology department.

Semester II (4th Quarter)

RADTT 334 Cross-Sectional Anatomy

25 clockhours

Content will introduce students to medical imaging methods currently used in the field of radiation therapy. Students will identify normal anatomical structures via a variety of imaging formats. Basic anatomical relationships will be compared using topographical and cross-sectional images Course content is designed to study normal sectional anatomy via diagrams and radiologic images.

Semester II (3rd Quarter)

RADTT 335 Dose Calculation / Treatment Planning II

20 Clockhours

This course will provide the student with the fundamentals Radiation Dosimetry. The course will provide instruction on understanding treatment devices, treatment planning and construction of plans, both manual and by computer. Stereotactic and emerging technologies are presented

Semester II (3rd Quarter)

RADTT 336 Computers in Radiation Therapy Dosimetry

20 Clockhours

A two part clinical course allowing the student to participate in computerized treatment planning. The student will be provided with the theoretical and practical foundation in the use of computers in Radiation Therapy, and develop an understanding of basic concepts of clinical dosimetry and treatment planning. The student may also be involved in fabrication of patient immobilization and beam shaping devices, as the caseload permits. Various external beam techniques, depth dose data, dosimetry of internal sources, among other topics, are discussed, and the student afforded the opportunity, under direct supervision, to perform duties of a dosimetrist.

Semester II (3rd or 4th Quarter)

RADTT 337 Operational Issues in Radiation Therapy

10 Clockhours

Content is designed to focus on various radiation therapy operational issues. Continuous quality improvement (CQI) project development and evaluation and assessment techniques will be emphasized. Human resource concepts and regulations impacting the radiation therapist will be examined. Accreditation agencies and the radiation therapist's role in the accreditation process will be emphasized. Billing and reimbursement issues pertinent to the radiation therapy department will be presented.

Semester II (3rd Quarter)

RADTT 338 Pathology II: Neoplasia

10 Clockhours

The course content is presented in two parts: general pathology and neoplasia. General pathology introduces basic disease concepts, theories of disease causation and system-by system pathophysiologic disorders most frequently encountered in clinical practice. Neoplasia provides an in-depth study of new and abnormal development of cells. The processes involved in the development and classification of both benign and malignant tumors and site-specific information on malignant tumors is presented.

Semester II (3rd Quarter)

RADTT 341 Radiation Biology

32 Clockhours

Content is designed to present basic concepts and principles of radiation biology. The interactions of radiation with cells, tissues and the body as a whole and resultant biophysical events will be presented. Discussion of the theories and principles of tolerance dose, time-dose relationships, fractionation schemes and the relationship to the clinical practice of radiation therapy will be discussed, examined and evaluated.

Semester II (3rd and 4th Quarter)

RADTT 347 Radiation Therapy Review Seminars

80 Clockhours

A review of radiation therapy technology aimed at preparing the student for the American Registry of Radiologic Technology. Mock registries will be given. The student will review various treatment plans for a malignant disease and be able to discuss the rationale behind them.

Semester II (3rd and 4th Quarter)

RADTT 430 Applied Therapeutic Procedures II

485 Clockhours

This course is a continuation of Applied Therapeutic Procedures I and is conducted in the clinical facility for the student completing the program in Radiation Therapy Technology. Content is designed to provide sequential development, application, analysis, integration, synthesis and evaluation of concepts and theories in radiation therapy. Through structured sequential assignments in clinical facilities, concepts of team practice, patient-centered clinical practice and professional development shall be discussed, examined and evaluated. The student will be afforded the opportunity, under direct supervision, to perform the duties and learn the responsibilities of a radiation therapy technologist.

Semester II (3rd and 4th Quarter) - Radiation Oncology Staff

Revised 1/2018

Attendance Documentation Policy

Policy

Students are required to document their attendance by clocking in and out on the TRAJESYS system. This system is an electronic based program that contains the student's competency forms, evaluation forms and attendance records to provide program officials with a method by which to regulate student attendance as they rotate through their various clinical and didactic assignments. A detailed description of the students' attendance is available at any time by logging into the TRAJESYS system. The attendance log documents month, day, and year. These Attendance forms are located in the Trajecsys Electronic site for each student. At graduation, a copy of the clock hours for each student is placed into the student's permanent file located in the Program Director's Office. In accordance with JRCERT policy, no student is to exceed a combined didactic and clinical work week in excess of 40 hours.

1. Upon reporting to the Hospital for their assigned shift, students will clock-in on the TRAJESYS system. All student badging transactions must take place on a computer located within the WVUH Radiation Oncology Department. **Clocking in or out on a personal computer or cell phone is not permitted**.
2. Upon leaving the Hospital after their assigned shift, students will clock-out on the TRAJESYS system.

Using PDO or Compensatory Time:

Students wishing to take PDO or Compensatory Time will be required to submit a Leave Request Form to a Program official prior to the date or time of their absence. The date and the exact amount of time the student will be absent must be included. The amount of time taken as PDO or Compensatory time will be added to the weekly computer printout so that a complete attendance record can be obtained.

Policy Enforcement:

Accurate evaluation and interpretation of student attendance can only be accomplished if students are methodical and precise in their clocking procedures. For this reason, the following guidelines have been established and will be strictly enforced.

1. Each student must clock-in and out with their own username and password. Students are not permitted to clock in or out for each other. Students are issued ID usernames and Passwords for clocking procedures.
2. Students that fail to clock-in will be counted absent until they subsequently clock-in for that day. All time not accounted for (missed clockings) will be either deducted from the students PDO balance or replaced by compensatory time if available.
3. If a student consistently fails to properly utilize the time clock system, the Disciplinary Action policy may be implemented.

Non-Registered Student Admissions Policy

West Virginia University Hospitals Radiation Therapy Education Program matriculates students who have provided proof of ARRT registration or have documented in writing that they are ARRT registry eligible for the Radiography examination. This policy is applicable to students that have not passed the American Registry of Radiologic Technologists (ARRT) registry examination in Radiography. Registry eligible students are accepted into the Radiation Therapy Education Program on the condition that they successfully pass the ARRT exam in Radiography.

Procedure:

1. The student must take the ARRT exam in Radiography **within 30 days** of entering the program (during or before the month of July).
2. The student must provide the Program Director with proof of eligibility, i.e., photocopy of admission ticket.
3. The Program must receive documentation of ARRT Registration **within 90** days following matriculation into the Program.
4. In the event that the student does not successfully pass the ARRT Radiography exam taken on or before July, the Education Advisory Committee will review and evaluate the student's case. The following evaluation criteria will include:

Evaluation Criteria:

1. The student must have maintained an overall didactic average of 86% (B) or better while enrolled in the program.
2. The student must not have been counseled regarding poor didactic or clinical performance while in the Program.
3. The student must have demonstrated a high level of proficiency, integrity and clinical ability.
4. The student must have met all financial obligations to the Program.

If the education advisory committee decides to allow the student to remain in the Program based on the above criteria, the following action will occur:

a. The student will be placed on academic probation until the results of a repeat attempt on the ARRT Radiography registry are obtained. The repeat attempt must occur **within 30 days** of the notification by the ARRT that the students failed the registry.
b. The student must provide the Program Director with proof of eligibility, i.e., photocopy of admission ticket.
c. The Program must receive documentation of ARRT Registration **within 60** days following the date of the repeat exam.
d. **In the event that the student does not successfully pass the repeat ARRT Radiography exam, the student will be dismissed from the Program without further consideration**. The student may reapply for admission consideration when they have successfully passed the ARRT exam in Radiography.

This policy is enacted for the purpose of:

1. Assuring that all students meet the required admissions requirements for the Radiation Therapy Education Program, thereby assuring the Program maintains high admission standards for accepting quality students.
2. Affording students who have made satisfactory academic, clinical and professional progress in the program another attempt to successfully pass their ARRT Exam in Radiography.

West Virginia University Hospitals
PO Box 8062
Morgantown, WV 26506
(304) 598-4251

Radiologic Technology Education Programs
Radiography, Radiation Therapy, Nuclear Medicine, Ultrasound, & MRI

Non-Registered Student Admission Agreement

I have received a copy of the non-registered student admissions policy for the West Virginia University Hospitals Radiation Therapy Technology Education Program. I have read and understand these regulations and agree to abide by the same. I agree not to hold West Virginia University Hospitals liable for any losses incurred including financial loss.

Print Name: _____

Student Signature:_____ Date: _____