

# Clinical Guidance for Students

## Dosimetry Programs

### Table of Contents

STUDENT RESPONSIBILITIES .....	2
Clinical Competencies .....	2
Clinical Structure .....	3
Literature Review.....	6
Research Project.....	6
Clinical Obligations .....	13
Screening Process .....	13
SPECIFIC GUIDANCE ON DELIVERABLES .....	14
STUDENT JOURNAL .....	15
Rubric for Internship Journal .....	16
POLICIES .....	19
Pregnancy Policy .....	19
Student Radiation Safety Policy .....	20
Student Clinical Compensation and Hours Requirement Policy .....	20
MANDATORY COMPETENCY EVALUATION FORM .....	22
CLINICAL ORIENTATION ACKNOWLEDGEMENT FORM .....	30

# STUDENT RESPONSIBILITIES

## Clinical Competencies

You are required to either complete or to be excused from every competency. Students in the Bachelor's Medical Dosimetry program are required to complete all competencies listed in the "BS Medical Dosimetry Clinical Competencies" document available through RTU's online campus. Students in the Master's Medical Dosimetry program are required to complete all competencies listed in the "MS Medical Dosimetry Clinical Competencies" document available through RTU's online campus.

"Completion" is defined as carrying out all the activities listed under the "deliverable" heading of the list of clinical competencies, and then having your site coordinator verify completion and then sign off the competency as completed.

To be "excused," you must present a valid reason for being unable to carry out all or part of the deliverable for that competency. The reason must be documented in your competency binder behind the CC document. See the specific guidance below for what deliverables may be excused.

You are expected to complete as much of the clinical competencies as possible prior to graduation, and only to be "excused" in those areas which you cannot complete due to uncontrollable factors. The specific timeline for doing so is ultimately your responsibility, but, as noted above, the site coordinator should be involved in developing a schedule for completing the work. The six-week suggested internship period should be viewed by as an opportunity to focus on activities that must be completed in the clinic. Running over this time period is not in and of itself an issue, so long as timely progress continues. Meet regularly with your site coordinator to evaluate your progress.

You are required to turn in your journal, which must include ALL calculations, observations, discussions, etc. for deliverables that are not excused.

Here are some important points to bear in mind during your internship:

- Remember during your internship that you are a professional representing RTU.
- Be aware of patient information privacy, site security, and site confidentiality issues. If you ever have any questions in this area, you should consult your site coordinator before proceeding.
- You should not work alone during your internship. When asked to "perform" a task, don't carry it out if you are uncomfortable with the procedure, unfamiliar with the procedure, or would be performing a task that you are not licensed or certified to perform if licensing or certification is necessary. **Direct patient contact procedures must be performed only under the direct supervision of a credentialed practitioner.** Always arrange working times with your coordinator.
- Get trained in radiation, chemical, biological and other health & safety concerns. Talk with your site coordinator to schedule training in these areas if you have not been trained on them on-site.

**The clinical internship journal is due thirty (30) days after completion of the clinical**

**internship competencies.** It is advantageous to be working on your journal while you are performing your competencies. This due date is not required for students who completed their internship competencies prior to January 17, 2017.

### Clinical Structure

The timeline below represents the student’s expected progress through the clinical internship. This is provided as a sample for general guidance. Due to the nature of the clinical program and clinical sites, certain competencies may be engaged at a schedule that differs from that presented below.

\*\*\*During the entire clinical internship, students are responsible for the RTU Clinical Competencies as provided in the Clinical Competencies Checklist.

The schedule below is separated into 4 tracks, each consisting of 180 hours. Feedback is provided to the student and the program by the preceptor on the student’s progress after each track utilizing the feedback forms provided.

Track 1
Professionalism and Ethics (outline provided)
Clinical Process: <ul style="list-style-type: none"> <li>✓ Observation with Physician</li> <li>✓ Observation with Nurse</li> <li>✓ Observation with Therapist</li> <li>✓ Chart Rounds</li> <li>✓ Tumor Boards</li> </ul>
Simulation Process and Procedures
Treatment Process and Procedures
Treatment Planning Process and Procedures, EMR
Radiation Safety in Radiation Oncology
3D and IMRT Planning
RTU Clinical Competencies ***

Track 2
Safety is No Accident Module
3D and IMRT Planning
VMAT Planning
Image Fusion
Patient Treatment QA
Radiation Safety in other Disciplines (Nuclear Medicine / Radiology)
RTOG Protocols
Literature Review Due (for graduate program students only)
RTU Clinical Competencies ***

### Track 3

AAPM Task Group 100: Risk Assessment

3D and IMRT Planning

VMAT Planning

Specialty Procedures (e.g.-Brachytherapy)

Plan Benchmarking

Radiation Safety Meeting

Physics QA

RTU Clinical Competencies \*\*\*

### Track 4

3D and IMRT Planning

VMAT Planning

Specialty Procedures

Patient QA and Physics / Dosimetry Consult

Medical Informatics in Oncology

Physics QA

Clinical Research Project Due (for graduate program students only)

RTU Clinical Competencies \*\*\*

Professionalism and Ethics	How covered	Comments
<b>Professionalism</b>		
○ Definition of a profession and professionalism		
○ Elements of a profession		
○ Definition of a professional		
○ Elements of professionalism		
○ How is professionalism judged?		
○ Do's and don'ts of professionalism		
○ Physician's charter and applicability to physicians		
<b>Leadership</b>		
○ Vision and charisma		
○ Qualities of leaders		
○ Rules of leadership		
○ Causes of leadership failure		
<b>Ethics</b>		
○ Ethics of a profession		
○ Ethics of an individual		
○ Interactions with colleagues and co-workers		
○ Interactions with patients and the public		
○ Confidentiality		
○ Peer review		
○ Negotiation skills		
○ Relationships with employers		
○ Conflicts of interest		
○ Ethics in research		
○ Use of animals in research		
○ Use of humans in research		
○ Relationships with vendors		
○ Publication ethics		
○ Ethics in graduate and resident education		
○ Selected case studies		

## Literature Review

*Each Medical Dosimetry graduate program student* must complete a clinically oriented research project. The literature review is the first step of this process and is due at the end of Track 2. The literature review accomplishes the following steps of the research process:

1. Decide on a topic
2. Identify literature on the topic and analyze
3. Summarize the findings and write a review
4. Identify your hypothesis and method for data collection and review

The following mentors can assist with your literature review and research project on areas such as applicable topics, validity of research methods, and timeliness and quality of research:

- ✓ Mellonie Brown-Zacarias, Ed.S., CMD, R.T.(T.), Medical Dosimetry Program Director
- ✓ Steve Goetsch, Ph.D., DABMP, Senior Medical Physicist

Your literature review must be submitted to Mellonie Brown-Zacarias along with your Track 2 completion paperwork.

## Research Project

*Each Medical Dosimetry graduate program student* must complete a clinically oriented research project. The literature review is the first step of this process. Once the literature review is complete and approved by the mentor, perform research by collecting data your data and analyzing results. The research project is due at the end of Track 4. Although not required to receive credit, options for your research project include submitting your paper for publication, presenting a poster at a professional meeting, or delivering a lengthy presentation.

Your research paper must be submitted to Mellonie Brown-Zacarias along with your Track 4 completion paperwork.

**RTU Medical Dosimetry Internship  
Track 1 Student Evaluation**

This form is to be completed by the preceptor at the completion of Track 1 (180 contact hours) of clinical internship. Preceptors should schedule a conference with the student at the completion of Track 1 to discuss student progress and potential areas for improvement. The preceptor must indicate whether the student is eligible to continue to Track 2 (Question #5 below). This form must be signed by the preceptor and student and returned to the school office for retention in the student's record.

Clinical Site \_\_\_\_\_

\_\_\_\_\_  
Evaluator Name

\_\_\_\_\_  
Student Name

1. Please indicate what clinical processes (e.g. observation with a nurse, chart rounds, tumor board) the student observed/completed during Track 1.
  
2. List simulation procedures the student participated in during this track.
  
3. Indicate treatment delivery procedures the student observed during this track.
  
4. Is the student able to answer questions on radiation safety practice in radiation oncology? Please explain.
  
5. Is the student competent and prepared to proceed to Track 2 of the clinical internship experience? Please explain.

Preceptor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RTU Medical Dosimetry Internship  
Track 2 Student Evaluation**

This form is to be completed by the preceptor at the completion of Track 2 (360 total contact hours) of clinical internship. Preceptors should schedule a conference with the student at the completion of Track 2 to discuss student progress and potential areas for improvement. The preceptor must indicate whether the student is eligible to continue to Track 3 (Question #5 below). This form must be signed by the preceptor and student and returned to the school office for retention in the student's record.

Clinical Site \_\_\_\_\_

\_\_\_\_\_  
Evaluator Name

\_\_\_\_\_  
Student Name

1. Please indicate what patient treatment QA the student observed/completed during Track 2.
  
2. List types of treatment planning procedures (3-D, IMRT, etc.) the student participated in during this track.
  
3. Is the student able to answer questions on RTOG and other clinically relevant treatment protocols? Please explain.
  
4. Is the student able to answer questions on radiation safety practice in other disciplines (Nuclear Medicine, MRI, Radiology, etc.)? Please explain.
  
5. Is the student competent and prepared to proceed to Track 3 of the clinical internship experience? Please explain.

Preceptor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RTU Medical Dosimetry Internship  
Track 3 Student Evaluation**

This form is to be completed by the preceptor at the completion of Track 3 (540 total contact hours) of clinical internship. Preceptors should schedule a conference with the student at the completion of Track 3 to discuss student progress and potential areas for improvement. The preceptor must indicate whether the student is eligible to continue to Track 4 (Question #5 below). This form must be signed by the preceptor and student and returned to the school office for retention in the student's record.

Clinical Site \_\_\_\_\_

\_\_\_\_\_  
Evaluator Name

\_\_\_\_\_  
Student Name

1. Please indicate what physics QA the student observed/completed during Track 3.
  
  
  
  
  
  
  
  
  
  
2. List types of treatment planning procedures (3-D, IMRT, VMAT, etc.) the student participated in during this track.
  
  
  
  
  
  
  
  
  
  
3. Is the student able to answer questions on AAPM Task Group 100? Please explain.
  
  
  
  
  
  
  
  
  
  
4. Please indicate what specialty procedures (Brachytherapy, SRS, SBRT, etc.) the student observed/completed during Track 3.
  
  
  
  
  
  
  
  
  
  
5. Is the student competent and prepared to proceed to Track 4 of the clinical internship experience? Please explain.

Preceptor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RTU Medical Dosimetry Internship  
Track 4 Student Evaluation**

This form is to be completed by the preceptor at the completion of Track 4 (720 total contact hours) of clinical internship. Preceptors should schedule a conference with the student at the completion of Track 4 to discuss student achievement during the clinical internship and potential professional life-long learning opportunities. The preceptor must indicate whether the student is eligible to complete the clinical internship course (Question #5 below). This form must be signed by the preceptor and student and returned to the school office for retention in the student's record.

Clinical Site \_\_\_\_\_

\_\_\_\_\_  
Evaluator Name

\_\_\_\_\_  
Student Name

1. Please indicate what patient specific QA and physics QA procedures the student completed during Track 4.
  
2. List types of treatment planning procedures (3-D, IMRT, VMAT, etc.) the student participated in during this track.
  
3. Is the student able to answer questions on medical informatics, including billing for clinical procedures? Please explain.
  
4. Please indicate what specialty procedures (Brachytherapy, SRS, SBRT, etc.) the student completed during Track 4.
  
5. Is the student eligible to complete the clinical internship experience? Please explain.

Preceptor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Clinical Obligations

Some Clinics may require different student clinical obligations such as drug screening, immunization records, and background checks, these items are performed at the students expense. Clinics that prefer to do their own testing and verification may do so directly with the student. RTU may be asked to perform these services and provide the results to the clinic upon their request.

Due to availability of clinical sites and student schedules, travel may be necessary in order to secure an appropriate clinical site. RTU resolves to make every effort to place student in a location that is within a reasonable distance from their place of residence.

Students may propose a clinical site closer to their place of residence than is currently available. In this instance, the University prefers to receive notice 5-6 months in advance for the purposes of communicating with the clinical site and securing paperwork. Students typically start their clinical internship hours during the second semester of their program. Students are expected to serve as a liaison between the University and the clinical setting.

Should a proposed site prove unsuitable, the student may propose another site or choose from sites currently available.

Evening/weekend clinical assignments are not required or encouraged. If measures must be taken in order to ensure adequate clinical time, proposals will be considered and must be agreeable to the student, University and clinical site.

## Screening Process

Radiological Technologies University requires the following to be done prior to beginning your clinical internship:

1. TB Test
2. Drug and Alcohol test
3. Background check

These tests are to be done at the student's expense. Clinical sites might require additional testing such as Hepatitis B, vaccinations, etc. Students are required to participate in any additional testing or vaccinations a clinical site may require beyond the RTU requirement.

## Arranging the Tests and Background Check

The tests can be arranged by creating an account with <https://www.castlebranch.com/>. The student will create an account and the service will direct them to the closest testing center in their area. If the service does not have participating testing centers in your area, contact the RTU Administration to arrange testing directly with a testing center in your area.

## SPECIFIC GUIDANCE ON DELIVERABLES

### **“View Presentation”**

This indicates that the student should watch a presentation or lecture corresponding to the topic. The presentations will be made available through the RTU course management system in a similar fashion to the lectures for didactic courses. If a particular presentation is available, the student is expected to watch it, even if the student is excused from other parts of that competency. The only means of being excused from watching a presentation is if that particular presentation is not available.

### **“Discuss in Journal”**

This indicates that the student should discuss any associated deliverables and topics in the competency. This could include commenting on the contents of a lecture, recording observations of a procedure, summarizing a report, recording notes taken during a calibration, and so on. The specifics of the journal are discussed below.

### **“Document” / “Document and Discuss”**

This indicates that the student is expected to provide relevant documentation, if any, for the other deliverables or activities in the competency. For instance, this could mean attaching a completed copy of worksheets or checklists used in a calibration. Be sure to respect any confidentiality and patient privacy needs when attaching documents.

If a competency does not have a “document” deliverable, do not assume that there is no documentation that may need to be attached. “Document” indicates that there will be an attachment; its absence does not indicate that there is no attachment. If you have any questions, please ask your coordinator or contact the school.

### **“Attend”**

This indicates that the student is expected to sit in on a session or meeting. If your coordinator is not present at the meeting, have one other attendee countersign the coordinator's signature. For repeated meetings such as chart rounds, it is only necessary to have one countersignature.

### **“Observe”**

This indicates that the student should observe a procedure. Shadow one of the physicists present, if possible, otherwise a dosimetrist, therapist, service engineer or other worker appropriate to the activity. Do not perform any action that you are uncomfortable in performing, untrained to perform, or incapable of performing.

### **“Perform”**

This indicates that the student is to carry out an activity. Coordinate ahead of time with your coordinator a time to carry out these tasks—do not work alone, and do not work without your coordinator's approval. Do not attempt to perform any procedure that you are uncomfortable in performing, untrained to perform, or incapable of performing.

### **“Identify”**

This indicates that the student should identify the equipment on-site, and provide spec sheets and other relevant reports, if possible.

## **Mandatory Competency Evaluation Form**

Each competency completed must have a Mandatory Competency Evaluation Form provided. The Evaluation Form is part of this document. The Clinical Preceptor at each clinical site is required to use this Evaluation Form for each competency completed.

## STUDENT JOURNAL

The primary student-generated deliverable for the internship is your student journal. You are expected to update this journal regularly (ideally every day you are working at the site) as a log of what you learn, study, and experience during your internship. There are specific activities and calculations that are called out in the CC document, but you should view the journal as a place to record your thoughts, ideas, observations, and notes in addition to being a place to record your formal responsibilities. The quality and completeness of your journal reflects on your overall experience during the internship. It is also intended to be completed over the course of your internship, so it is important that you make regular entries.

We would like to have your journal organized by competency, if possible. Use the code numbers given in the CC document (for instance, Sample Analysis by Scintillation Detection is #R1). Organize your journal in a way that will allow you to keep this format while being able to update regularly.

You must have an entry for each competency on the list. The entry must at least include the calculations, discussions, or other activities that are specified in the CC document under the “deliverable” heading. A discussion should be included with ANY calculation or observation, even if not specifically called out in the CC document. For instance, if you are asked to “observe a wipe count,” your discussion should include the details of what you observed as the wipe was taken and counted, which could include the area of the facility that was wiped, the size of the wipe area, the type of counter used, the reason for doing the wipe survey, the regulations that required that survey, etc..

Please attempt to keep all documents, whether printouts or scratch paper etc., in the same format, so that you have one cohesive “journal” to turn in. Although the minimum is to complete the deliverables, you are very strongly encouraged to add any other documents, notes, etc. that you generate. You will want to keep a copy of any important documents or notes, however, for your later reference, as your journal will NOT be returned to you.

You may keep your journal electronically or on paper. In either case, you are expected to keep it in prosaic, scientific-writing style. Narrative style is acceptable when documenting a procedure, but be sure to explain what you are doing as you document doing it.

If you are keeping your journal on paper be aware that you will be doing a very large amount of writing: write in pen and legibly enough to be read. Include a written journal in the same binder as the CC sheet, if at all possible.

If you are keeping your journal electronically, please keep it as a .DOC or .ODT file, or other text-document format. Do not keep it as a spreadsheet or PowerPoint presentation, as these are not conducive the prosaic style of writing expected of you. Back up your journal regularly!

**The clinical internship journal is due thirty (30) days after completion of the clinical internship competencies.** It is advantageous to be working on your journal while you are

performing your competencies. This due date is not required for students who completed their internship competencies prior to January 17, 2017.

### Rubric for Internship Journal

Note: A score of 3 or higher in each evaluation area must be achieved for successful completion of the internship journal.

Score Levels	Content	Conventions	Organization	Scope/Detail
4	<ul style="list-style-type: none"> <li>Is well thought out and presented</li> <li>Indicates high level application of critical thinking skills</li> <li>Has all required components</li> <li>Is factually accurate</li> </ul>	<ul style="list-style-type: none"> <li>No spelling, grammatical, or punctuation errors</li> <li>High-level use of vocabulary and word choice</li> </ul>	<ul style="list-style-type: none"> <li>Information is clearly focused in an organized and thoughtful manner</li> <li>Information is constructed in a logical pattern to enhance understanding.</li> </ul>	<ul style="list-style-type: none"> <li>Includes detailed information for each case or project presented</li> <li>Is comprehensive and covers all relevant aspects of the case or project</li> </ul>
3	<ul style="list-style-type: none"> <li>Is fairly well thought out and presented</li> <li>Indicates critical thinking that is apparent to the reader</li> <li>Has all required components</li> <li>Is accurate</li> </ul>	<ul style="list-style-type: none"> <li>Few spelling, grammatical, or punctuation errors</li> <li>Good use of vocabulary and word choice</li> </ul>	<ul style="list-style-type: none"> <li>Information is clearly focused in an organized manner with a few minor lapses.</li> <li>Information is constructed in a logical manner with minor lapses</li> </ul>	<ul style="list-style-type: none"> <li>Includes detailed information for cases or projects presented with minor lapses</li> <li>Is comprehensive and covers all relevant aspects of the case or project with minor lapses</li> </ul>
2	<ul style="list-style-type: none"> <li>Appears somewhat disorganized and not well thought out</li> <li>Indicates low level critical thinking skills</li> <li>Has most required components</li> <li>Has some factual errors or inconsistencies</li> </ul>	<ul style="list-style-type: none"> <li>Significant spelling, grammatical, or punctuation errors but content can be understood by the reader</li> <li>Low-level use of vocabulary and word choice</li> </ul>	<ul style="list-style-type: none"> <li>Information has a focus but lapses are obvious.</li> <li>Information appears to have a pattern, but the pattern is not consistently carried out.</li> </ul>	<ul style="list-style-type: none"> <li>Includes detailed information for some cases or projects with obvious lapses</li> <li>Clear lapses in comprehensiveness of information presented</li> </ul>
1	<ul style="list-style-type: none"> <li>Content not well thought out and is confusing</li> <li>Has no apparent application of critical thinking skills</li> <li>Has some required components</li> <li>Has significant factual errors, misconceptions, or misinterpretations</li> </ul>	<ul style="list-style-type: none"> <li>Numerous spelling, grammatical, or punctuation errors impeding understanding of content</li> <li>Poor use of vocabulary and word choice</li> </ul>	<ul style="list-style-type: none"> <li>Content is unfocused and haphazard.</li> <li>Information is not constructed in a logical manner</li> </ul>	<ul style="list-style-type: none"> <li>Information is obviously unfinished with major gaps in detail and comprehensiveness</li> </ul>

<b>0</b>	<ul style="list-style-type: none"> <li>▪ Journal is submitted with blatant errors in content or is plagiarized</li> </ul>	<ul style="list-style-type: none"> <li>▪ Poorly written to the point of being incomprehensible to the reader</li> </ul>	<ul style="list-style-type: none"> <li>▪ Information is extremely confusing in its organization or there is no organization</li> </ul>	<ul style="list-style-type: none"> <li>▪ Very little to no detail included</li> </ul>
----------	---	---	--	---

**Evaluator Name** \_\_\_\_\_ **Date** \_\_\_\_\_

Categories	Student Score and Notes
<b>Content</b>	<p>Score (circle one): 0 1 2 3 4</p> <p>Comments:</p>
<b>Conventions</b>	<p>Score (circle one): 0 1 2 3 4</p> <p>Comments:</p>
<b>Organization</b>	<p>Score (circle one): 0 1 2 3 4</p> <p>Comments:</p>

<b>Scope/Detail</b>	<b>Score (circle one): 0 1 2 3 4</b>  <b>Comments:</b>
---------------------	--

**Overall Evaluator Comments:**

# POLICIES

## Pregnancy Policy

Students should understand that a pregnancy during the Medical Dosimetry program may have an impact on their education and possibly upon the timing of graduation. Two important factors are involved.

1. Courses are only offered at select times each year and time missed for pregnancy and/or delivery will likely necessitate make up work or perhaps delay of up to a year to maintain the proper sequence of courses, depending on the timing and amount of time missed.
2. There are potential risks to an embryo or fetus secondary to radiation exposure that may require counseling and alteration of the clinical education experience.

The following policy has been developed to guide the program and its students in the event of a student pregnancy.

- A. Female students are asked to read The U. S. Nuclear Regulatory Commission Regulatory Guide 8.13 regarding [“Possible Health Risks to Children of Women Who are Exposed to Radiation During Pregnancy”](#) as well as the pregnancy policy and complete and return the associated form. This document can be found at: <http://pbadupws.nrc.gov/docs/ML0037/ML003739505.pdf>.
  - B. All students will be made aware of risks and hazards of prenatal radiation exposure during coursework at RTU and upon orientation to the clinical internship.
  - C. A student who is pregnant, or suspects that she may be, has the option to voluntarily declare that condition to program officials.
    - a. If the student decides to declare the pregnancy it shall be done in writing to the Program Director and/or the Clinical Supervisor of her internship site. The notification shall also include the expected date of delivery.
    - b. A student may reverse their pregnancy declaration at any time. This option is voluntary and the reversal must be provided in writing to the Program Director and/or the Clinical Supervisor of her internship site.
    - c. The program will comply with student confidentiality requests as much as possible.
  - D. If a student chooses to declare a pregnancy, a counseling session will be set up with the radiation safety officer at the student’s clinical internship site to review radiation exposure risks and any additional monitoring practices which may be initiated.
  - E. A declared pregnant student may choose one of the options below (or may choose to change to a different option at a later time if desired, with written notice):
    - a. Take a leave of absence from the program. (See policy for leave of absence.) Should the declared pregnant student decide to leave the program during pregnancy and delivery, tuition will be refunded according to the Tuition Refund Policy. In this circumstance the student would be readmitted to the program at the first available opening after delivery.
    - b. Stay in the program, but make modifications in her clinical rotation schedules to reduce the chance of exposure to the fetus.
      - i. For example, she will not participate in site specific rotations as recommended by the Radiation Safety Officer during the time of the pregnancy.
- Competency and experience in all required areas will be made up following

- delivery. This could delay graduation beyond the originally expected date.
- c. Stay in the program and/or internship during pregnancy and continue the program without modification of learning activities or clinical rotations. If she decides to do this, she does so in full knowledge of the potential hazard of embryo/fetal radiation exposure.
    - i. It is recommended that the student consult their personal physician should they choose this option. The student must also indicate, in writing her intention to continue the program without modification. A copy of this document will be kept in the student's file.

Should delivery occur during clinical internship, all course work and clinical time must be completed before the student is eligible for graduation.

### Student Radiation Safety Policy

- A. Students entering the clinical setting for their internship must receive orientation to radiation safety practices and requirements by the Radiation Safety Officer.
- B. A radiation monitoring badge must be worn by the student at all time while in the department.
- C. Students assisting in the simulator and treatment units must never be in the room during exposure to treatments.
- D. Students working in brachytherapy must remember and put to use techniques of time, distance, and shielding.
- E. Radiation exposure levels will be monitored by the University RSO. If a student's radiation exposure reading exceeds 30 mrem on a single report, the program director must be informed immediately. The RSO and program director will investigate the reason for the reading and determine an action plan within 10 days to ensure that the student follows ALARA principles.
- F. If the student exceeds the trigger dose limit (30 mrem) on any personal monitoring report, the student must be removed from the clinical setting and counseled immediately by the university RSO, Program Director, and Clinical Coordinator on how to avoid further exposure.
- G. Notification: Dosimetry reports will be received by the Clinical Preceptor at the site. The Clinical Preceptor will provide the individualized dosimetry report to each student. No personal information will be visible to individuals other than the one named on the report. The student will sign the dosimetry report and a copy will be sent to Radiological Technologies University.

### Student Clinical Compensation and Hours Requirement Policy

Students entering the clinical setting for their internship are required to work no more than ten (10) hours per day and no more than 40 hours per week (less if taking didactic coursework concurrently), for a total of 720 hours at the clinical site. The exact number of clinical internship hours per week must be determined in consultation with the educational program and clinical site. Students taking 16 credit hours of didactic coursework may spend a maximum of 24 hours per week in the clinical practice setting.

The student is entitled to no compensation while performing competencies for the clinical internship. Any extra hours the student chooses to spend are purely voluntary and the student is entitled to no compensation or extra credit of any kind.



**MANDATORY COMPETENCY EVALUATION FORM**

Page 1 of 3

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Evaluator Name: \_\_\_\_\_ Site: \_\_\_\_\_

This form is to be completed by the evaluator.

Evaluator: Please mark each task as P (pass), F (fail), or NA (not applicable). For mastery, the student must Pass in each Task listed below unless a specific task is determined N/A by the evaluator.

**The competency is a Fail and should be repeated by the student for mastery attainment if the plan is not treatable or unacceptable for treatment or has an error that makes a significant difference in the distribution. Documentation of a Failed competency should be submitted to the program for statistical analysis.**

<b>Task</b>	<b>Pass</b>	<b>Fail</b>	<b>N/A</b>	<b>Evaluator Comments</b>
<b>1. The student completed the plan independently</b>				
<b>2. Treatment Prescription followed</b>				
<b>3. Isocenter/Calc Point Placement</b>				
<b>4. Treatment structures identified (CTV, PTV, etc.)</b>				
<b>5. Treatment structures covered adequately</b>				
<b>6. Critical structures contoured (OAR, etc)</b>				
<b>7. Critical structure doses appropriate</b>				
<b>8. Hot spot placement</b>				
<b>9. Beam angle selection</b>				
<b>10. Treatment accessory devices appropriately utilized</b>				
<b>11. Dose engine/algorithm appropriate</b>				
<b>12. Heterogeneity appropriately selected</b>				

<b>13. Appropriate Dose grid selection</b>				
--	--	--	--	--

**MANDATORY COMPETENCY EVALUATION FORM**

Page 2 of 3

<b>Task</b>	<b>Pass</b>	<b>Fail</b>	<b>N/A</b>	<b>Evaluator Comments</b>
<b>14. Image transfer/Fusion</b>				
<b>15. Tx Couch contoured appropriately</b>				
<b>16. Minor contours correct</b>				
<b>17. Independent calculation performed (Hand calc., Computer MU Calc., etc.)</b>				
<b>18. Record and Verify System information correct</b>				
<b>19. Plan can be implemented clinically</b>				
<b>20. Overall plan appropriateness acceptable</b>				
<b>21. Overall plan quality acceptable</b>				
<b>22. Student obtained plan approval from a certified medical dosimetrist or other credentialed practitioner as appropriate prior to treatment</b>				
<b>23. Student obtained plan approval from physician</b>				
<b>24. Planning time reasonable</b>				
<b>25. Able to answer questions relevant to planning of case (cognitive evaluation)*</b>				
<b>26. Interact with others in a mentoring/mentee role as appropriate (affective evaluation)</b>				

27. Courteous and professional behavior displayed (affective evaluation)				
--	--	--	--	--

MANDATORY COMPETENCY EVALUATION FORM  
Page 3 of 3

\* Note: Examples of appropriate questions include the following:

1. What would be other possible treatment options for this clinical case?
  
2. What possible complications might the patient experience as a result of this treatment dose?
  
3. What are difficulties that the radiation therapist may experience when implementing this treatment plan?
  
4. What are some benefits of this particular treatment delivery modality, energy, beam arrangement, etc?

**Evaluator Comments:**

---



---



---



---



---



---

**Student Comments:**

---



---



---



---



---



---

\_\_\_\_\_  
**Student Signature**

\_\_\_\_\_  
**Date**

---

**Evaluator Signature**

---

**Date**

## RTU Medical Dosimetry Educational Program Internship

### Mandatory Competency Evaluation Form Grading Rubric

The grading rubric below is designed to clearly identify expected behaviors for each item in the Mandatory Competency Evaluation Form. Evaluators are encouraged to include an explanation when an item is marked “N/A”.

<b>Task</b>	<b>Pass</b>	<b>Fail</b>	<b>N/A</b>
<b>1. The student completed the plan independently</b>	The student completed all work on the treatment plan working independently	The student did not complete all work on the treatment plan working independently	This item must be completed by the preceptor. N/A will result in student's failure of the competency.
<b>2. Treatment Prescription followed</b>	The student followed the prescription as written by the physician	The student failed to follow the prescription as written by the physician	This item is not applicable to this competency.
<b>3. Isocenter/Calc Point Placement</b>	The student placed the isocenter and/or calculation point properly for this plan based on accepted planning practice and patient anatomy	The student failed to place the isocenter and/or calculation point properly based on accepted planning practice and patient anatomy	This item is not applicable to this competency.
<b>4. Treatment structures identified (CTV, PTV, etc.)</b>	The student identified and segmented (contoured) treatment structures properly for this plan based on accepted planning practice and patient anatomy	The student failed to identify and/or segment (contour) treatment structures properly for this plan based on accepted planning practice and patient anatomy	This item is not applicable to this competency.
<b>5. Treatment structures covered adequately</b>	Treatment plan for the clinical case achieved adequate coverage of treatment structures (PTV, CTV, etc) according to clinical practice standards as specified by RTOG protocol, clinical protocol, and/or physician prescription.	Treatment plan for the clinical case failed to achieve adequate coverage of treatment structures (PTV, CTV, etc) according to clinical practice standards as specified by RTOG protocol, clinical protocol, and/or physician prescription.	This item is not applicable to this competency.
<b>6. Critical structures contoured (OAR, etc)</b>	The student identified and segmented (contoured) critical structures properly for this plan based on accepted planning practice and patient anatomy	The student failed to identify and segment (contour) critical structures properly for this plan based on accepted planning practice and patient anatomy	This item is not applicable to this competency.
<b>7. Critical structure doses appropriate</b>	Treatment plan for the clinical case achieved adequate coverage of critical structures according to clinical practice standards as specified by RTOG protocol, clinical protocol, and/or physician prescription.	Treatment plan for the clinical case did not achieve adequate coverage of critical structures according to clinical practice standards as specified by RTOG protocol, clinical protocol, and/or physician prescription.	This item is not applicable to this competency.
<b>8. Hot spot placement</b>	Treatment plan for the clinical case achieved placement of hot spot according to clinical practice standards as specified by RTOG	Treatment plan for the clinical case failed to achieve placement of hot spot according to clinical practice standards as specified by RTOG protocol, clinical protocol, and/or physician prescription.	This item is not applicable to this competency.

	protocol, clinical protocol, and/or physician prescription.		
<b>9. Beam angle selection</b>	The student selected beam angles properly for this plan based on accepted planning practice and patient anatomy	The student failed to select beam angles properly for this plan according to accepted planning practice and patient anatomy	This item is not applicable to this competency.
<b>10. Treatment accessory devices appropriately utilized</b>	The student selected treatment accessory devices (wedges, custom blocks, bolus, etc.) properly for this plan based on accepted planning practice and patient anatomy	The student failed to select treatment accessory devices (wedges, custom blocks, bolus etc.) properly for this plan according to accepted planning practice and patient anatomy	This item is not applicable to this competency.
<b>11. Dose engine/algorithm appropriate</b>	The student selected the dose engine/calculation algorithm (e.g. Pencil Beam, AAA, Monte Carlo, etc.) properly for this plan based on accepted treatment planning practice	The student failed to select the dose engine/calculation algorithm (e.g. Pencil Beam, AAA, Monte Carlo, etc.) properly for this plan according to accepted treatment planning practice	This item is not applicable to this competency.
<b>12. Heterogeneity appropriately selected</b>	The student utilized heterogeneity corrections properly for this plan based on accepted treatment planning practice	The student failed to utilize heterogeneity corrections properly for this plan according to accepted treatment planning practice	This item is not applicable to this competency.
<b>13. Appropriate Dose grid selection</b>	The student ensured that the dose grid for the plan calculation was appropriate based on accepted treatment planning practice	The student failed to ensure that the dose grid for the plan calculation was appropriate according to accepted treatment planning practice	This item is not applicable to this competency.
<b>14. Image transfer/Fusion</b>	The student performed image data set transfer and fusion (if required) properly for this plan based on accepted planning practice and patient anatomy	The student failed to perform image data set transfer and fusion (if required) properly for this plan based on accepted planning practice and patient anatomy	This item is not applicable to this competency.
<b>15. Tx Couch contoured appropriately</b>	The student contoured the treatment/simulation couch properly for this plan based on accepted planning practice and patient anatomy	The student failed to contour the treatment/simulation couch properly for this plan	This item is not applicable to this competency.
<b>16. Minor contours correct</b>	The student contoured any minor structures (e.g. carina, T-12, etc.) properly for this plan based on accepted planning practice and patient anatomy	The student failed to contour minor structures (e.g. carina, T-12, etc.) when needed or contoured them improperly for this plan	This item is not applicable to this competency.
<b>17. Independent calculation performed (Hand calc., Computer MU Calc., etc.)</b>	The student performed an independent calculation (e.g. hand calc, computer-based MU calc) properly for this plan using accepted planning practice	The student did not perform an independent calculation or failed to perform the independent calculation (e.g. hand calc, computer-based MU calc) properly according to accepted planning practice	This item is not applicable to this competency.

<b>18. Record and Verify System information correct</b>	The student entered and/or verified the Record and Verify information properly for this plan using accepted planning practice	The student failed to enter and/or verify the Record and Verify information properly for this plan using accepted planning practice	This item is not applicable to this competency.
<b>19. Plan can be implemented clinically</b>	The student ensured that the treatment plan can be implemented in the clinic through interaction with other clinical team members (e.g. therapist, dosimetrist, radiation oncologist)	The student failed to ensure that the treatment plan can be implemented in the clinic through interaction with other clinical team members (e.g. therapist, dosimetrist, radiation oncologist)	This item is not applicable to this competency.
<b>20. Overall plan appropriateness acceptable</b>	The overall treatment plan is appropriate according to accepted medical dosimetry practice.	The overall treatment plan is not appropriate according to accepted medical dosimetry practice.	This item is not applicable to this competency.
<b>21. Overall plan quality acceptable</b>	Quality of the treatment plan meets or surpasses clinical practice standards acceptable as specified by RTOG protocol, clinical protocol, and/or physician prescription	Quality of the treatment plan does not meet clinical practice standards acceptable as specified by RTOG protocol, clinical protocol, and/or physician prescription	This item is not applicable to this competency.
<b>22. Student obtained plan approval from a certified medical dosimetrist or other credentialed practitioner as appropriate prior to treatment</b>	Student actively interacted with a CMD or other appropriately credentialed practitioner as appropriate regarding the treatment plan to gain approval prior to implementation.	Student failed to interact with a CMD or other credentialed practitioner as appropriate regarding the treatment plan to gain approval prior to implementation	This item is not applicable to this competency.
<b>23. Student obtained plan approval from physician</b>	Student actively interacted with the physician regarding the treatment plan to gain approval.	Student failed to interact with the physician regarding the treatment plan to gain approval	This item is not applicable to this competency.
<b>24. Planning time reasonable</b>	The amount of time the student utilized to successfully complete a treatment plan is reasonable relative to plan complexity (e.g. 2-6 hours total planning time for simple or intermediate plans, 8 or more hours for complex plans)	The amount of time the student utilized to successfully complete a treatment plan is unreasonable relative to plan complexity	This item is not applicable to this competency.
<b>25. Able to answer questions relevant to planning of case (cognitive evaluation)*</b>	Student confidently and clearly presented answers to evaluator questions relevant to the clinical case.	Student failed to confidently and clearly present answers to evaluator questions relevant to the clinical case.	This item is not applicable to this competency.
<b>26. Interact with others in a mentoring/mentee role as appropriate (affective evaluation)</b>	Student behavior exemplified characteristics of a mentor and/or mentee as appropriate. These behaviors include active eagerness to learn and actively assisting others.	Student behavior failed to exemplify characteristics of a mentor and/or mentee. These behaviors include lack of eagerness to learn and lack of desire to assist others.	This item is not applicable to this competency.

<p><b>27.</b> <b>Courteous and professional behavior displayed (affective evaluation)</b></p>	<p>Student behaved in a courteous and professional manner during all interpersonal interactions according to guidelines for the organization in which the student is assigned. <b>*Note: The student must be informed regarding professional behavior guidelines for the organization prior to completing competencies</b></p>	<p>Student failed to behave in a courteous and professional manner during all interpersonal interactions according to guidelines for the organization in which the student is assigned.</p>	<p>This item is not applicable to this competency.</p>
---	--	---	--

## CLINICAL ORIENTATION ACKNOWLEDGEMENT FORM

I, \_\_\_\_\_, certify that I received and reviewed the safety and health policies and procedures established by my clinical site.

This training included HIPAA training, fire safety, emergency preparedness, medical emergencies, hazards, and standard precautions.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Preceptor Signature

\_\_\_\_\_  
Date