

# **JPU Student Internship**

## **Medical Dosimetry Programs**

The ultimate goal of the student internship is to provide the student with a broad swath of clinical experience that is relevant to the duties and knowledge base of a clinical medical dosimetrist. The student is required to complete at least 720 hours at no more than 40 hours per week (between internship hours and didactic coursework) and no more than ten hours per day. 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.

A list of competencies is provided along with this document. Please review them with the understanding that it is expected that students may not be able to complete every competency based on factors such as equipment availability. JPU follows the suggested AAMD curriculum. JPU also encourages the assignment of special procedures or other activities the Preceptor deems appropriate.

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## CONTACT LIST

<b>Name</b>	<b>Role</b>	<b>Email &amp; Phone</b>
<b>Dave Phebus</b>	Program Director	<a href="mailto:dphebus@jpu.edu">dphebus@jpu.edu</a> 317-523-4301
<b>Crystal Stancell</b>	Faculty and Educational Coordinator	<a href="mailto:cstancell@jpu.edu">cstancell@jpu.edu</a> 864-270-0199
<b>Tommy Costantino</b>	Faculty and part-time Educational Coordinator	<a href="mailto:Thomas.costantino@jpu.edu">Thomas.costantino@jpu.edu</a> 561-252-9826
<b>Elizabeth (Betsy) Datema</b>	Director of Administrative Services	<a href="mailto:bdatema@jpu.edu">bdatema@jpu.edu</a> 574-232-2408
<b>Linda Murphy</b>	Director of Recruitment	<a href="mailto:lmurphy@jpu.edu">lmurphy@jpu.edu</a> 574-232-2408
<b>Brent Murphy</b>	President, John Patrick University	<a href="mailto:bmurphy@jpu.edu">bmurphy@jpu.edu</a> 574-232-2408

# JPU Medical Dosimetry Education Program

## Checklist for Student Advising Prior to Clinical Internship

Topics discussed:

1. \_\_\_\_ Competency Checklist
  - a. Program specific – M.S. or B.S.
  - b. Mandatory Treatment Planning Competencies
  - c. Student must complete one form of planning for each Mandatory Treatment Planning Competency (e.g. Lung plan either 3D, IMRT, or VMAT according to the practice of the clinic).
  
2. \_\_\_\_ Mandatory Competency Evaluation Form
  - a. Complete a form for EACH mandatory Treatment Planning Competency
  - b. Completed by Preceptor – Pass/Fail form
  - c. Technical, cognitive, and behavior evaluation
  - d. Grading rubric in Clinical Guidance for Students Handbook
  
3. \_\_\_\_ Tracks 1-4
  - a. 180 hours per track
  - b. Tracks independent of semesters
  - c. Submit evaluation to school at end of each Track; Indicate student's eligibility to continue to the next Track
  - d. Preceptor and student signature required
  
4. \_\_\_\_ Clinical Orientation Acknowledgement Form
  - a. Student and preceptor must sign acknowledging student orientation
  - b. Form located at end of Clinical Guidance for Students Handbook
  
5. \_\_\_\_ Radiation Badge Report
  - a. Report automatically downloaded by school quarterly
  - b. School will supply badge
  
6. \_\_\_\_ Attendance Requirement and Documentation
  - a. Student must record time on Time Sheet and have preceptor signature
  - b. Student must not receive pay during clinical internship hours
  - c. The student is not allowed to complete more than 10 hours per day clinical hours
  - d. Student is not allowed to attend clinical internship more than 40 hours per week.
  - e. If the student is taking 16 credit hours of didactic coursework, a maximum of 24 hours for the clinical internship is allowed per week.

7. \_\_\_\_ Journal Expectations
  - a. Must follow HIPAA guidelines for patient privacy
  - b. Screenshots of work in clinic (e.g. Isodoses, DVHs)
  - c. Demonstrate critical thinking
  - d. Grading rubric located in Clinical Guidance for Students Handbook
  
8. \_\_\_\_ Competency Performance Requirements
  - a. Mandatory competencies must be done independently
  - b. Plan must be reviewed by a dosimetrist (or other qualified professional) and approved before treatment
  - c. Student encouraged to participate in review of plan with Radiation Oncologist.
  
9. \_\_\_\_ Preceptor and Student Evaluations
  - a. Student must complete evaluation of preceptor at tend of Track 2 and Track 4. Available at [www.jpu.edu](http://www.jpu.edu) website.
  - b. Preceptor must complete evaluation of student at end of Track 2 and Track 4. Available at [www.jpu.edu](http://www.jpu.edu) website.

The signatures below acknowledge that all of the above topics have been satisfactorily covered by a program official and all current questions by the student (and preceptor when feasible) have been addressed.

Program Official:

Name: \_\_\_\_\_

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

Student:

Name: \_\_\_\_\_

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

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

## 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 JPU 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. JPU assigns a dosimeter to each student prior to entering their clinical setting.
- 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 annually. 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: Students in the clinical setting have access to their readings at any time through a secure username and password. Students receive notifications monthly telling them to review their reading or contact the educational coordinator. Correspondence to students monthly also includes informing them of the trigger dose of 30 mrem and the procedure to follow if their reading exceeds the trigger dose on a single reading. Annual reports reviewed by the University RSO are provided to the student within 30 school days after being reviewed. Students receive the report through their University student account through a secured username and password. No personal information will be visible to individuals other than the one named on the report.

### 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 forty (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.

## Internship Structure

The Clinical Internship Resource Library is available through the student's course management system login and provides resources for both the student and preceptor.

### Track 1

- ✓ Professionalism and Ethics (outline provided in the Clinical Internship Resource Library)
- ✓ Clinical Process
  - Observation with Physician
  - Observation with Nurse
  - Observation with Therapist
  - Chart Rounds
  - Tumor Boards
- ✓ Simulation Process and Procedures
- ✓ Treatment Process and Procedures
- ✓ Radiation Safety in Radiation Oncology
- ✓ 3D and IMRT Planning
- ✓ JPU 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)
- ✓ JPU 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



- ✓ JPU 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)
- ✓ JPU Clinical Competencies

#### 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:

- ✓ David Phebus, MS, 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.

# 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: \_\_\_\_\_

# JPU 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: \_\_\_\_\_

**JPU 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: \_\_\_\_\_

# JPU 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: \_\_\_\_\_

## Mandatory Competency Evaluation Forms

The evaluation form is a pass/fail checklist. The checklist primarily evaluates technical skills, but it is also designed to address cognitive and behavioral elements. You, as the Preceptor, are expected to complete the evaluation form for the different competencies and then the completed form will be provided to the student. The student is expected to compile and submit the completed evaluations to JPU as part of their clinical journal.

Even if a “fail” decision is given for a competency, the student will be asked to perform until they pass. JPU wants to receive all evaluations, pass or fail, so areas of concern can be addressed, if needed.

## MANDATORY COMPETENCY EVALUATION FORM

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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.**

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

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

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**Student Comments:**

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

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

\_\_\_\_\_  
**Evaluator Signature**

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

**JPU 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 protocol, clinical protocol, and/or physician prescription.	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.
<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. *Note: The student must be informed regarding professional behavior guidelines for the organization prior to completing competencies</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>
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<b>Date</b>	<b>Start/End time</b>	<b>Number of hours (must be in increments of 30 minutes)</b>	<b>Student's Initials</b>	<b>Clinical Supervisor's Initials</b>

I certify that the student named above has successfully completed a minimum of 180 hours of clinical attendance as outlined in University Policies and Procedures.

Student's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Clinical Preceptor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Preceptor Meetings

The Medical Dosimetry Program Director will typically hold meetings every 6 months, or as needed. Preceptors are always encouraged to communicate with JPU outside of meetings with questions, concerns, feedback, or suggestions.

## Evaluations

JPU values feedback from both the Preceptor and Student throughout the clinical internship. The Preceptor is expected to complete the **Medical Dosimetry Student Clinical Evaluation** at the end of Track 2 and Track 4. Preceptors are encouraged to complete an evaluation any time they feel is appropriate during the internship. Preceptors are also encouraged to contact the Program Director, David Phebus, MS, CMD, R.T.(T.) at any time with questions or concerns.

Online evaluations can be found at [www.jpu.edu](http://www.jpu.edu) under the “Internship” tab of the “Medical Dosimetry” or “B.S. Medical Dosimetry” program (Within the School of Physics and Radiological Sciences) under the “Preceptor Completion” heading.

BS Medical Dosimetry Program Students: <https://www.surveymonkey.com/r/PQQ5YQB>

MS Medical Dosimetry Program Students: <https://www.surveymonkey.com/r/G8VZGNP>

The student is expected to complete the **Medical Dosimetry Preceptor Evaluation** at the end of Track 2 and Track 4. Students are encouraged to complete an evaluation anytime they feel is appropriate during the internship. JPU will protect the anonymity of student evaluations as much as possible.

Online evaluations can be found at [www.jpu.edu](http://www.jpu.edu) under the “Internship” tab of the “Medical Dosimetry” or “B.S. Medical Dosimetry” program (Within the School of Physics and Radiological Sciences) under the “Student Completion” heading.

BS Medical Dosimetry Program Students: <https://www.surveymonkey.com/r/PFYWQVM>

MS Medical Dosimetry Program Students: <https://www.surveymonkey.com/r/GQT2RVW>



## **BS Medical Dosimetry Program Details: Non-Certified Medical Dosimetrists (non-CMD)**

Required Credit hours: 120\*

Program Duration: 2 years (67 weeks)

Program Tuition: \$34,134 (\$533.34 per credit)

### *Curriculum*

#### *Core Courses (64/120\* credits required)*

Transfer	General Education Credits*	(36 credits)
Transfer	Core Credits*	(20 credits)
MD301	Radiation Dosimetry	(3 credits)
MD303	Introduction to Imaging	(3 credits)
MD302	Radiation Biology	(3 credits)
MD305	Radiation Therapy I	(3 credits)
MD306	Radiation Therapy II	(3 credits)
MHP308	Health Physics & Radiation Safety	(3 credits)
MD304	Brachytherapy	(3 credits)
MD390	Medical & Professional Ethics	(1 credit)
BIOL301	Human Anatomy & Physiology	(4 credits)
MD310	Treatment Planning I	(3 credits)
MD311	Treatment Planning II	(3 credits)
MD410	Treatment Planning III	(3 credits)
MD411	Treatment Planning IV	(3 credits)
MD320	Clinical Rotation I	(4 credits)
MD321	Clinical Rotation II	(4 credits)
MD420	Clinical Rotation III	(4 credits)
MD421	Clinical Rotation IV	(4 credits)
MD495	Capstone	(3 credits)
MD499	Clinical Internship	(4 credits)

#### *Elective Courses (1 course required)*

MD351	Introduction to Medical Physics	(3 credits)
MD352	Imaging Anatomy	(3 credits)
MATH201	Calculus I	(3 credits)
MD205	Introduction to Radiation Therapy Planning <sup>A</sup>	(3 credits)
MD403	Advanced Imaging	(3 credits)
MD405	Alternative Modalities-Proton Therapy	(3 credits)

<sup>A</sup>Mandatory course for students entering the program without a Radiation Therapy background

## **BS Medical Dosimetry Program Details: Current Certified Medical Dosimetrists (CMD)**

Required Credit hours: 120\*

Program Duration: 2 years (67 weeks)

Program Tuition: 32,000 (\$533.34 per credit)

### *Curriculum*

#### *Core Courses (64/120\* credits required)*

Transfer	General Education Credits*	(36 credits)
Transfer	Core Credits*	(20 credits)
MD301	Radiation Dosimetry	(3 credits)
MD303	Introduction to Imaging	(3 credits)
MD302	Radiation Biology	(3 credits)
MD305	Radiation Therapy I	(3 credits)
MD306	Radiation Therapy II	(3 credits)
MHP308	Health Physics & Radiation Safety	(3 credits)
MD304	Brachytherapy	(3 credits)
MD390	Medical & Professional Ethics	(1 credit)
BIOL301	Human Anatomy & Physiology	(4 credits)
MD310	Treatment Planning I	(3 credits)
MD311	Treatment Planning II	(3 credits)
MD410	Treatment Planning III	(3 credits)
MD411	Treatment Planning IV	(3 credits)
MD320	Clinical Rotation I	(4 credits)
MD321	Clinical Rotation II	(4 credits)
MD420	Clinical Rotation III	(4 credits)
MD421	Clinical Rotation IV	(4 credits)
MD497	Capstone	(3 credits)

#### *Elective Courses (1 course required)*

MD351	Introduction to Medical Physics	(3 credits)
MD352	Imaging Anatomy	(3 credits)
MATH201	Calculus I	(3 credits)
MD205	Introduction to Radiation Therapy Planning <sup>A</sup>	(3 credits)
MD403	Advanced Imaging	(3 credits)
MD405	Alternative Modalities-Proton Therapy	(3 credits)

<sup>A</sup>Mandatory course for students entering the program without a Radiation Therapy background

## MS Medical Dosimetry Program Details: Non-Certified Medical Dosimetrists (non-CMD)

Required Credit hours: 45

Program duration: Two years (67 weeks)

Program Tuition: \$40,000 (20,000 year) \$888.89 per credit graduate level/program courses

### Curriculum

#### *Core Courses (39 credits required)*

MD502	Radiation Biology	(3 credits)
MD505	Radiation Oncology I	(3 credits)
MD506	Radiation Oncology II	(3 credits)
MP520	Computer Systems in Medicine	(2 credits)
MHP510	Health Physics and Radiation Safety	(3 credits)
MHP607	Radiation Oncology Department Management	(2 credits)
MHP609	Radiation Oncology Financials	(2 credits)
MP590	Medical and Professional Ethics	(1 credit)
STAT501	Statistical Methods	(3 credits)
MP599	Seminars <sup>A</sup>	(2 credits)
MD588	Clinical Treatment Planning I	(2 credits)
MD590	Clinical Treatment Planning II	(2 credits)
MD688	Clinical Treatment Planning III	(2 credits)
MD690	Clinical Treatment Planning IV	(2 credits)
MD695	Capstone	(3 credits)
MD699	Clinical Internship <sup>C</sup>	(4 credits)

<sup>A</sup>Required to complete two 1-credit Seminars courses

#### *Elective Courses (6 credits required)*

MD501	Radiation Dosimetry	(4 credits)
MD611	Brachytherapy <sup>D</sup>	(3 credits)
MD503	Diagnostic Radiology	(3 credits)
MD504	Nuclear Medicine	(3 credits)
MD613	Nuclear Oncology	(3 credits)
MD615	Proton Therapy	(2 credits)
MD630	Contouring, Imaging, and Special Procedures <sup>B</sup>	(2 credits)
MD633	Informatics in Radiation Oncology <sup>B</sup>	(2 credits)
MD635	Clinical Safety and Quality Assurance <sup>B</sup>	(2 credits)

<sup>B</sup> This course is required for the Practitioner Concentration. Upon completion of the first two semesters, students are eligible to take this course upon receiving satisfactory evaluation of both academic and professional performance.

The Non-Certified Medical Dosimetrist Route (non-CMD) allows international students who graduate to be eligible to take the Medical Dosimetrist Certification Exam through the Medical Dosimetrist Certification Board (MDCB) as an international candidate who did not complete a JRCERT accredited program. Eligibility requirements can be found at [www.mdcb.org/exam-information/exam-dates-and-fees/international-exam-policy](http://www.mdcb.org/exam-information/exam-dates-and-fees/international-exam-policy).

<sup>C</sup>The clinical internship requires 1,000 hours to be completed concurrently with the degree program to be eligible for the Medical Dosimetrist Certification Exam through the MDCB as an international candidate who did not complete a JRCERT accredited program.

<sup>D</sup>This elective is required to be eligible for the Medical Dosimetrist Certification Exam through the MDCB as an international candidate who did not complete a JRCERT accredited program.

## MS Medical Dosimetry Program Details: Current Certified Medical Dosimetrists (CMD)

Program Credit hours: 45

Program duration: Two years (67 weeks)

Program Tuition: \$40,000 (20,000 year) \$888.89 per credit graduate level/program courses

### *Curriculum*

#### *Core Courses (39 credits required)*

MD502	Radiation Biology	(3 credits)
MD505	Radiation Oncology I	(3 credits)
MD506	Radiation Oncology II	(3 credits)
MP520	Computer Systems in Medicine	(2 credits)
MHP510	Health Physics and Radiation Safety	(3 credits)
MHP607	Radiation Oncology Department Management	(2 credits)
MHP609	Radiation Oncology Financials	(2 credits)
MP590	Medical and Professional Ethics	(1 credit)
STAT501	Statistical Methods	(3 credits)
MD611	Brachytherapy	(3 credits)
MP599	Seminars <sup>A</sup>	(2 credits)
MD588	Clinical Treatment Planning I	(2 credits)
MD590	Clinical Treatment Planning II	(2 credits)
MD688	Clinical Treatment Planning III	(2 credits)
MD690	Clinical Treatment Planning IV	(2 credits)
MD697	Capstone	(4 credits)

<sup>A</sup>Required to complete two 1-credit Seminars courses

#### *Elective Courses (6 credits required)*

MD501	Radiation Dosimetry	(4 credits)
MD503	Diagnostic Radiology	(3 credits)
MD504	Nuclear Medicine	(3 credits)
MD613	Nuclear Oncology	(3 credits)
MD615	Proton Therapy	(2 credits)
MD630	Contouring, Imaging, and Special Procedures <sup>B</sup>	(2 credits)
MD633	Informatics in Radiation Oncology <sup>B</sup>	(2 credits)
MD635	Clinical Safety and Quality Assurance <sup>B</sup>	(2 credits)
MD610	Education and Practicum I <sup>C</sup>	(2 credits)
MD611	Education and Practicum II <sup>C</sup>	(3 credits)
MD612	Education and Practicum III <sup>C</sup>	(3 credits)
MD613	Education and Practicum IV <sup>C</sup>	(3 credits)

<sup>B</sup>This course is required for the Practitioner Concentration. Upon completion of the first two semesters, students are eligible to take this course upon receiving satisfactory evaluation of both academic and professional performance.

<sup>C</sup> Certified Medical Dosimetrists may take this course in lieu of the four Clinical Treatment Planning Courses (MD588, MD590, MD688, MD690)