

CERTIFICATE IN MEDICAL RADIATION DOSIMETRY

Overview

The Certificate in Medical Radiation Dosimetry is appropriate for those who seek professional qualification and employment as medical radiation dosimetrists. This 30-credit, one-year program grounds the student in the rudiments of clinical oncology, radiation physics, radiation biology, human anatomy, medical imaging, and radiation treatment technology, which the radiation dosimetrist applies continually in practice. Graduates can expect to enter employment directly as radiation dosimetrists eligible for professional certification. The program requires one year of full-time commitment, a substantial part of which is clinical training in the University of Miami Department of Radiation Oncology under the supervision of practicing dosimetrists and medical physicists. Of the 30 credits required, 12 are traditional classroom courses, and 18 credits are clinical with a lecture component. A final comprehensive exam is also required.

Admission Requirements

Applicants for admission must hold at least a Bachelor of Science or Bachelor of Applied Science Degree or equivalent, with a minimum grade point average of 3.0 or must have graduated from an accredited radiation therapy program and hold a bachelor's degree with minimum grade point average of 3.0. Successful candidates will have completed post-secondary work in basic mathematics and physics, biology, anatomy and physiology, and oral and written communication. All applicants must complete a minimum of 16 hours of clinical shadowing of a certified Medical Dosimetrist before submitting their application. Those with insufficient background may be admitted provisionally at the discretion of the admissions committee while they do remedial work. Preference will be shown to those who have completed at least one year of physics and calculus. Submission of TOEFL scores will be required of candidates who have not earned degrees in the United States.

Curriculum Requirements

| Code | Title | Credit Hours |
|---------------------------|---|--------------|
| RON 601 | Clinical Oncology and Anatomy for Medical Dosimetry | 2 |
| RON 603 | Radiation Biology for Medical Dosimetry | 2 |
| RON 605 | Quality and Safety in Radiotherapy | 2 |
| RON 610 | Radiation Oncology Physics I | 3 |
| RON 611 | Radiation Oncology Physics II | 3 |
| RON 810 | Medical Dosimetry Practicum I | 6 |
| RON 811 | Medical Dosimetry Practicum II | 6 |
| RON 812 | Medical Dosimetry Practicum III | 6 |
| Total Credit Hours | | 30 |

Graduation Requirements

The Certificate in Medical Radiation Dosimetry will require 30 credit hours of course and practical work only. A cumulative grade point average of 3.0 is required. No transfer of credit may be used in fulfillment of these requirements.

Candidates for the certificate will need to demonstrate competency by passing a comprehensive written examination set by an examination committee of at least three instructors during the final summer session of the program. Re-examination of a student failing the exam may occur at the discretion of the committee and must be completed within one year of failure but not during the same summer session as the original exam.

Mission

The mission of the University of Miami's graduate program in medical radiation dosimetry is to equip students with the skills and knowledge to provide excellent medical dosimetry service to radiotherapeutic practice and to foster students' curiosity, critical and analytical thinking, and creativity so they can contribute to the growth of their field.

Goals

The program's primary educational objective is to provide clinical, didactic, and research experience consistent with curricular recommendations of the American Association of Medical Radiation Dosimetrists and the Joint Review Committee on Education in Radiologic Technology (JRCERT) such that upon program completion graduates can work as entry level medical radiation dosimetrists and pass professional certification examination by the Medical Dosimetrist Certification Board, which they will be eligible to take pending the program's accreditation by the latter body JRCERT.

While these goals are highly specific, the program commits itself not merely to the training of niche workers, but also to the cultivation of students' interpersonal, technical, and scientific communication skills, to the development of multiple skills, analytical, integrative, discursive, and computational, and creative, that are called upon by those who solve difficult problems.

Students will have a structured, immersive clinical experience in the University of Miami Department of Radiation Oncology, consisting of rotations through major areas of medical dosimetry practice, supervised by University of Miami medical dosimetrists and medical physicists and supplemented by parallel classroom instruction in the practice of medical dosimetry. Didactic courses will be taught by faculty physicians, medical physicists, and biologists and will provide foundational training in core topics of anatomy and oncology, medical physics, radiation biology, and radiation oncology quality management.

Student Learning Outcomes

Upon completion of the program, students will be able to:

- demonstrate medical dosimetry treatment planning skills by generating for multiple treatment sites clinically acceptable plans
- evaluate treatment plans and successfully formulate, apply, and justify orally and in writing strategies for their improvement
- accurately and precisely communicate radiotherapy treatment planning issues orally and in writing with dosimetrists, medical physicists, and radiation oncologists.