



Certificate in Medical Dosimetry

Have You Considered a Career as a Medical Dosimetrist?

To be a medical dosimetrist you must have an aptitude for physics and mathematics and an eye for details and accuracy. Medical dosimetrists plan radiation treatment for external beam and brachytherapy treatment delivery to cancer patients. Dosimetry applies knowledge of mathematics, physics, and the biological and medical sciences to treat cancer. You have to be a team player to work closely with physicists, physicians, radiation therapists, and other hospital personnel.

Certificate in Medical Dosimetry Program

The Medical Dosimetry program prepares students in the discipline of dosimetry within a radiation oncology environment. The program has two entry tracks. The Radiation Therapist track and B.S. Physics/Math track are both a 15-month full-time programs. This program assists students in preparation for the Medical Dosimetrist Certification Board (MDCB) examination.

Mission Statement

The mission of the Medical Dosimetry Certificate Program is to prepare professionals in the field of Medical Dosimetry with students receiving broad education and training in all aspects of the profession. This will include critical thinking, clinical competence, effective communication, and professionalism as they apply to the field of Medical Dosimetry. The program encourages intellectual, physical, social, and spiritual development by emphasizing these goals in its curriculum, which are reflected in the mission statement of Loma Linda University Health - "To Make Man Whole".

Medical Dosimetry Goals and Student Learning Outcomes

The student Learning Outcomes (SLOs) of the Medical Dosimetry Program are (1) Students will demonstrate critical thinking by performing hand calculations and utilizing software tools to optimize isodose distributions to achieve treatment goals, through maximizing target coverage. (2) Students will be clinically competent at creating deliverable treatment plans with consideration of machine and patient constraints, calculating monitor units for clinical set-ups and minimizing systematic and random errors by checking plan parameters. Students will thoughtfully follow hospital policies and procedures while performing all dosimetry activities. (3) Students will be able to communicate effectively, both verbally, and in writing. (4) Students will demonstrate professionalism by treating everyone with respect and courtesy, abiding by all HIPPA rules. They will demonstrate responsible attitude and be accountable for their actions. (5) The program will achieve the following outcomes: Students will

complete the program, pass the MDCB exam, have a job within 6 month period after passing their MDCB exam, and maintaining an attrition rate of less than 25%.

Clinical Training

For clinical training, each student is assigned to an affiliated medical center. In addition to Loma Linda University Medical Center, we have other clinical affiliates located in the Los Angeles area. Each student is responsible for transportation to the clinical affiliate location.

Job Demands

The essential functions of a Medical Dosimetrist require certain physical mental, and emotional attributes. Physical demands include lifting, carrying, bending, manipulation of equipment, patient assistance, walking & possible prolonged standing. The ability to read written orders, computer screens, graphs, 2-D and 3-D beam dose and models, patient records, and equipment controls is critical. The ability to communicate with patients, physicians, and coworkers is used daily. Mental & emotional demands include critical decision making, managing urgent time sensitive situations, interactions with patients of varying ages, diversity, and health conditions.

Application Window

The application window is from October 1 to April 1. The program starts each September.

Financial Information

In addition to tuition, a quarterly charge is made that covers miscellaneous student fees that are not covered as part of tuition. The student should be prepared to be responsible for all tuition fees, living expenses, and transportation costs. Loma Linda University does have excellent financial aid available. The Student Finance office on campus provides information on how to obtain loans and grants. You may begin your financial aid process on October 1. You may begin the loan application process before you have actually been accepted. For financial aid information call: (909) 558-4509.

Important Program Financial Disclosures can be found at:

Physics Track: <http://alliedhealth.llu.edu/sites/alliedhealth.llu.edu/files/docs/disclosures/bs-physics/Gedt.html>

Radiation Therapist Track: <http://alliedhealth.llu.edu/sites/alliedhealth.llu.edu/files/docs/disclosures/med-dos/Gedt.html>

Accrediting Associations

The American Association of Medical Dosimetrists (AAMD) mandates the concept of formal dosimetry training, which leads to board eligibility for certification in Medical Dosimetry, Certified Medical Dosimetrist (CMD). This qualification is considered to be the “gold standard” in the dosimetry profession. The program is accredited with the Joint Review Committee on Education in Radiologic Technology (JRCERT).

Program Design

Both tracks are five quarters in length. Instruction combines lectures, labs, and clinical work. Students are exposed to different modalities within dosimetry including working with x-ray therapy, brachytherapy, and proton therapy. All clinical instruction will be conducted in the Radiation Medicine department at LLUMC. The only exception will be the practicum hours completed at affiliate sites. All didactic courses will be held in LLUH facilities. Program faculty include physicists and dosimetrists experienced in both photon and proton therapy treatment planning.

Admission Requirements

Admission to this program is dependent on the student fulfilling certain educational requirements, and completing career observation experience.

Educational Background

Students will either need to have:

- 1) ARRT registration in Radiation Therapy Technology with a Bachelor's degree in any major. Additional prerequisites: College Algebra.
- 2) A Bachelor's degree in Physics or Mathematics from an accredited university. Additional pre-requisites: Anatomy and physiology (no lab needed) and Medical Terminology

*All course requirements must be met before the start of the program.

Application Procedure

A new class in Dosimetry begins each Fall. The program is competitive as only two students can be admitted each year. Plan to apply early.

1. Please read the online application instructions carefully. Be sure that your application is complete, including the statement of purpose.
2. Submit three references
3. Send high school and each college's transcripts to:
Admissions Office, School of Allied Health Professions, Loma Linda University, Loma Linda, CA 92350.

Acceptance Process

All applicants will be interviewed by the selection committee. If you are within a reasonable driving distance you should plan to arrange for a personal interview. After all applicants have been interviewed, the selection committee for the Medical Dosimetry Program meets to make the final decision. Acceptances are usually decided by the first week of June and confirmation of each decision is mailed to the respective applicant from the Office of Admissions for the School of Allied Health Professions.

Curriculum

B.S. Physics/Math Track

RTTH 344 Radiation Therapy Procedures	2
RTMD 355 Physical Principles of Radiation Therapy I	3
RTMR 285 Principles of Radiography I	3
RTMR 334 Cross-sectional Radiographic Anatomy	2
RTTH 364 Radiation Oncology I	2
RTMD 961 Practicum	1
RTTH 365 Radiation Oncology II	2
RTMD 356 Physical Principles of Rad. Therapy II	3
RTTH 332 Radiation Biology	2
RTMD 962 Practicum	1
RTMD 301 Treatment Planning I	2
RTMD 307 Principles of Brachytherapy	2
RTSI 369 CT Physics	2
RTTH 366 Radiation Oncology III	2
RTMD 963 Practicum	1
RTMD 302 Treatment Planning II	2
RTMD 314 Quality Assurance with lab	2
RTMD 964 Practicum	1
RExx xxx Relegion Elective	2
RTMD 305 Special Topics	2
RTMD 965 Practicum 35 hours/week	1

Radiation Therapist Track

RTMD 309 Radiation Therapy Core Concepts Review	1
RTMD 971 Practicum	1
*RTMD 355 Physical Principles of Radiation Therapy I	3
RTMR 334 Cross-sectional Radiographic Anatomy	2
RTMD 310 Applied Math in Radiation Therapy	1
*RTMD 356 Physical Principles of Rad. Therapy II	3
RTMD 972 Practicum	1
RTMD 301 Treatment Planning I	2
RTMD 307 Principles of Brachytherapy	2
RTSI 369 CT Physics	2
RTMD 973 Practicum	1
RTMD 302 Treatment Planning II	2
RTMD 314 Quality Assurance with lab	2
RTMD 974 Practicum	1
RTMD 305 Special Topics	2
RTMD 975 Practicum	1
RExx xxx Religion Elective	2
* Students who have already taken these classes will be required to retake them under another number.	

Program Director:

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<http://www.llu.edu/allied-health/sahp/radtech/dosimetry.page?>

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LOMA LINDA
UNIVERSITY

LLU at a Glance

>> Founded in 1905 >> A Seventh-day Adventist institution integrating health, science, and Christian faith >> Offers over 200 programs in the health sciences >> Houses eight schools: Allied Health Professions, Behavioral Health, Dentistry, Medicine, Nursing, Pharmacy, Public Health, and Religion >> About 4,000 students >> Over 1,300 faculty >> 2,000 professional researchers >> \$46 million dollars in private and public grants generated each year >> Many service learning opportunities

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