Radiation Therapy Program

PROGRAM DESCRIPTION

The 20-month Radiation Therapy Program blends the academic resources of the University of Minnesota with courses and clinical experiences at Mayo Clinic in Rochester and other facilities within Mayo Health System. The program is sponsored by Mayo School of Health Sciences (MSHS) and taught in cooperation with the University of Minnesota’s College of Continuing Education (UM-CCE). The two-year radiation therapy program provides the high-quality didactic and clinical experiences needed to create a well-rounded, fully competent radiation therapist.

The Radiation Therapy Program integrates new treatment procedures, such as intensity-modulated radiation therapy, with well established conventional treatments and radiosurgery. You will learn about the most advanced delivery tools and techniques.

The Mayo Clinic Division of Radiation Oncology treats approximately 2,500 patients each year. Of those, 1,800 are new patients. This large medical practice allows you to gain experience with many tumor types and treatments.

MISSION STATEMENT

The mission of the Radiation Therapy Program is to educate and prepare students through high-quality academic and clinical experiences. This is accomplished by educating and graduating students who can:

- Provide outstanding patient care by applying their professional skills in a variety of clinical settings
- Excel in the field of radiation therapy, actively participate and engage in the profession and lifelong learning
- Advance radiation therapy as a discipline

The mission of the Radiation Therapy Program derives from Mayo Clinic’s standing as one of the leading international health-care organizations and our existence as a prominent top-ranking radiation oncology department.

GOALS

To uphold our mission, the Radiation Therapy Program holds the following goals:

1. To graduate students who demonstrate knowledge in all didactic areas and are able to integrate this knowledge in the clinical areas.
2. To graduate students who are professional, able to think critically, problem solve and communicate effectively.

3. To graduate radiation therapists who provide outstanding patient care, who become certified, employed in their field, and who engage in the profession and lifelong learning.

ACCREDITATION

This program is accredited by the Joint Review Committee on Education in Radiologic Technology:

Joint Review Committee on Education in Radiologic Technology
20 N. Wacker Drive, Suite 900
Chicago, IL 60606-2901
(312) 704-5300
www.jrcert.org

Mayo Foundation is also accredited by the North Central Association of Colleges and Schools Higher Learning Commission.

Higher Learning Commission
30 N. LaSalle Street, Suite 2400
Chicago, IL 60602-2504
(800) 621-7440
(312) 263-0456
Fax: (312) 263-7462
www.ncacihe.org

AFFILIATED INSTITUTION(S)

To participate in the Mayo School of Health Sciences’ Radiation Therapy Program at Mayo Clinic College of Medicine, you must be admitted to the MSHS Radiation Therapy Program. A concurrent application is submitted to the University of Minnesota to enroll in courses taught by the University of Minnesota and for admission into the Bachelor of Applied Science in Radiation Therapy (BAS-RT).

For more information or to enroll in the Mayo Clinic-sponsored Radiation Therapy Program, please contact the program director at Mayo School of Health Sciences:

Leila A. Bussman-Yeakel, Radiation Therapy Program Director
(507) 284-4148 or (507) 284-6151
E-mail: bussmanyekel.leila@mayo.edu

Mayo Clinic College of Medicine
Mayo School of Health Sciences
Charlton Building, Desk R
200 First Street SW
Rochester, MN 55905
To apply to the University of Minnesota College of Continuing Education, contact:

**Faith Zimmerman, University of Minnesota Rochester**  
Radiation Therapy Program Advisor  
(507) 285-7210 or (800) 247-1296  
TTY Relay (800) 627-3529

**University of Minnesota - Rochester Center**  
Bachelor of Applied Science in Radiation Therapy (BAS-RT)  
851-30th Ave SE  
Rochester, MN 55904-4999

**FACILITIES**

Mayo Clinic’s Division of Radiation Oncology has exceptional patient care facilities with advanced therapy equipment, which includes linear accelerators with dual asymmetric jaws, multi-leaf collimators, electronic portal imaging and IMPAC treatment verification software.

The Rochester facility includes six linear accelerators, one fluoroscopic simulator and two CT simulators, an orthovoltage unit, an integrated brachytherapy unit, a hyperthermia unit, a dedicated Linear Accelerator intra-operative therapy suite, and eight three-dimensional treatment planning computers, all with CT/MRI interfacing.

The Mayo Clinic campus in Rochester is comprised of an extensive outpatient complex, Saint Marys Hospital, Rochester Methodist Hospital, and multiple research and education facilities. It is one of the largest, most advanced medical centers in the world.

**GRADUATION REQUIREMENTS AND CERTIFICATION**

To successfully complete the program and receive a certificate in Radiation Therapy from Mayo School of Health Sciences, you must meet the following requirements:

- A cumulative grade point average of 2.5 or better on a 4.0 scale.
- Successful completion of didactic course work and all clinical competencies.
- Be in good standing with all program policies.

Upon successful completion of the Radiation Therapy Program, you will receive a Certificate of Completion from Mayo School of Health Sciences.

Graduates may apply to take the National Registry Examination administered by the American Registry of Radiologic Technologists.
Students who have been admitted to the University of Minnesota College of Continuing Education BAS program and successfully completed all course work will receive a Bachelor of Applied Science Radiation Therapy (BAS-RT) degree.

**HOURS**

For the majority of the program, your learning schedule will include eight-hour days, five days per week. Hours are 8 a.m. to 4:30 p.m., Monday through Friday.

**CLASS SIZE**

Each year, Mayo School of Health Sciences admits five to eight students to its Radiation Therapy Program at Mayo Clinic in Rochester. This ensures you will receive a comprehensive educational experience with one-on-one instruction.

**Curriculum**

Through our well-planned and supervised clinical and didactic program, you will gain experience in all areas of radiation oncology.

**CLINICAL TRAINING**

During your clinical training you will observe and participate in special treatment techniques. These include:

- Intraoperative radiotherapy (IORT)
- Brachytherapy
- Hyperthermia
- Leksell gamma knife radiosurgery

**DIDACTIC TRAINING**

This program is a full-time, day school program. You will spend an average of 12-to-15 hours a week in didactic instruction, with the remaining time in clinical rotations.

**ROTATIONS**

During monthly rotations, under the supervision of qualified radiation therapists, you will have learning opportunities in all aspects of radiation oncology.
OFF-SITE ROTATIONS
All students take an offsite rotation to Immanuel St. Joseph’s Hospital, part of Mayo Health System in Mankato, Minn.
While it is your responsibility to commute to this site, Mayo Clinic will provide assistance with housing, travel and meal expenses. During the rotation, you will receive didactic course work via a videoconferencing system.

COURSE SEQUENCE
The following five semesters of courses are required to complete the MSHS Radiation Therapy Program. Students must enroll in the University of Minnesota - Rochester to register for the required courses. All courses are taught in Rochester using a combination of face-to-face and online delivery.

All MSHS Radiation Therapy academic and clinical course work is accepted by the University of Minnesota.

“UMR” indicates course held at the University of Minnesota - Rochester Center. All other courses are held at Mayo Clinic.

Year 1 - Fall Semester (September-December)

<table>
<thead>
<tr>
<th>Number</th>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>RTT 3501</td>
<td>Introduction to Radiation Therapy</td>
<td>.2</td>
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<tr>
<td>RTT 3521</td>
<td>Patient Care in Radiation Oncology</td>
<td>.2</td>
</tr>
<tr>
<td>RTT 3541</td>
<td>Pathology</td>
<td>.1</td>
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<td>RTT 3561</td>
<td>Cross-Sectional Anatomy</td>
<td>.2</td>
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<td>RTT 3596</td>
<td>Clinical Practicum I</td>
<td>.3</td>
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<tr>
<td>HSM 3501</td>
<td>Clinical Research Concepts &amp; Practice</td>
<td>.3</td>
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<tr>
<td>RTT 3601</td>
<td>Clinical Quality Assurance &amp; Computer Applications</td>
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Total Credits: 14

Year 1 - Spring Semester (January-May)

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<tr>
<td>RTT 3581</td>
<td>Principles and Practices of Radiation Therapy I</td>
<td>.4</td>
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<tr>
<td>RTT 3551</td>
<td>Radiation Oncology Physics</td>
<td>.3</td>
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<tr>
<td>RTT 3701</td>
<td>Advanced Radiobiology and Radiation Protection</td>
<td>.3</td>
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<tr>
<td>RTT 3696</td>
<td>Clinical Practicum II</td>
<td>.3</td>
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<tr>
<td>HSM 3521</td>
<td>Health Care Delivery Systems (UMR)</td>
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Total Credits: 16
Year 1 - Summer Semester (June-August)

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<tr>
<td>RTT 4596</td>
<td>Clinical Practicum III</td>
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Total Credits: 6

Year 2 - Fall Semester (September-December)

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<tr>
<td>RTT 4581</td>
<td>Principles and Practices of Radiation Therapy II</td>
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<tr>
<td>RTT 4511</td>
<td>Dosimetry and Treatment Planning</td>
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</tr>
<tr>
<td>RTT 4696</td>
<td>Clinical Practicum IV</td>
<td>3</td>
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<tr>
<td>Phar 3800</td>
<td>Pharmocotherapy for the Health Professions</td>
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<tr>
<td>HSM 4541</td>
<td>Health Care Finance (UMR)</td>
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Total Credits: 17

Year 2 - Spring Semester (January-May)

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<tr>
<td>RTT 4601</td>
<td>Project</td>
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<td>RTT 4796</td>
<td>Clinical Practicum V</td>
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<td>HSM 4561</td>
<td>Health Care Administration and Management (UMR)</td>
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<tr>
<td>HSM 4581</td>
<td>Teaching in the Health Care Setting (UMR)</td>
<td>3</td>
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<tr>
<td>HSM 4501</td>
<td>Writing for the Health Professions (UMR)</td>
<td>3</td>
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<tr>
<td>ABus 4041</td>
<td>Leadership in a Global and Diverse Workplace (UMR)</td>
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Total Credits: 16

Upper-Division Credits: 69

GRADING OR EVALUATION

As you move through the Radiation Therapy Program rotations, you will be evaluated in each clinical area by the supervising therapists, the program director and the clinical supervisors. Course work is graded on a four-point scale. A competency-based evaluation system and performance appraisal forms are used to evaluate clinical performance.

Mayo School of Health Sciences uses evaluative tools that include:

- Written examination
- Demonstration of skills
- Faculty reviews

Our system of evaluation provides students and faculty with a comprehensive look at individual performance, allowing students...
who are experiencing academic difficulty to be directed to appropriate support resources, including tutoring programs and counseling opportunities.

Faculty

TEACHING FACULTY

The Radiation Therapy Program draws its faculty from Mayo Clinic’s clinical, scientific and technical staffs and the University of Minnesota. The MSHS faculty includes radiation therapists, dosimetrists, physicians and physicists from the Division of Radiation Oncology. Mayo Clinic faculty are selected for their commitment to teaching as well as clinical practice and/or research. Many have published and lectured extensively and are highly regarded in their field. You will have direct access to these individuals throughout the program - with the opportunity to learn directly from some of today’s best practitioners of radiation oncology.

VISITING PROFESSORS/LECTURERS

A hallmark of higher education excellence is the breadth and depth of information and experience provided students by the faculty and visiting experts. Many prominent professors visit Mayo Clinic to lecture on their areas of medical and scientific expertise each year. As a student of Mayo School of Health Sciences, you are encouraged to attend all conferences, lectures and seminars prepared for students, residents, fellows and consulting staff.

Admissions

PREREQUISITES

The Radiation Therapy Program at Mayo Clinic in Rochester is open to all applicants who have:

- Successfully completed an accredited radiography program with a GPA of 3.0 or higher
- Documented observation experience in radiation oncology
- Prerequisite college course work (30 credits) that includes:
  - General psychology
  - English composition
  - Speech
- Algebra
- Precalculus mathematics
- Anatomy and physiology
- Computer science course (applications and programming)

The Radiation Therapy Program does not accept transfer students from other radiation therapy programs.

POLICIES AND RESPONSIBILITIES

The following Mayo School of Health Sciences policies affect applications and admissions to its programs:

**English fluency**
Fluency in written and spoken English is essential to succeed in the program and to ensure patient safety. If English is a second language, you must be able to demonstrate fluency. Satisfactory performance on the Test of English as a Foreign Language examination or the Michigan Test of English Language Proficiency must be documented as proof of fluency. Your test results must be less than two years old.

**Immunization record**
For the protection of patients, students and employees, and in compliance with state regulations, Mayo Clinic requires students to be properly immunized. You must show proof of the following immunizations before you begin a program at Mayo School of Health Sciences:

- Tuberculin test in the past six months
- Varicella, rubella, and rubeola immunity
- Up-to-date diphtheria and tetanus shots
- Hepatitis B vaccination or signed declaration

Documentation of vaccinations must be provided to Mayo Employee Health Service prior to the start of the program.

**Health status**
Prospective students will undergo a physical examination or nurse’s review at Mayo Clinic and will have the opportunity to update or receive the required tests and immunizations cited above. More information about the physical exam will be provided after you have been offered a program appointment. Appointment to the program depends upon successful completion of the physical examination.
Medical insurance
Students must have medical insurance coverage during their program. Student medical insurance can be purchased through Mayo Clinic. To buy Mayo Clinic student insurance you need to be appointed to a full-time certificate or degree program which will last at least one year.

You can also choose to have your medical insurance covered through other, non-Mayo plans (i.e., insurance held through a parent or spouse, or an independent commercial plan). Evidence of medical coverage must be provided when your educational program begins.

BACKGROUND CHECK
Prospective students must pass a criminal background check and/or drug screening required by state laws, prior to enrollment to Mayo School of Health Sciences.

STUDENT RESPONSIBILITIES
• Mayo School of Health Sciences students are expected to attend all scheduled classes, examinations and assigned clinical rotations unless absence is approved.
• You must maintain a grade of “C” or above in each element of your academic and clinical performance. Independent course work may be required for any area of deficiency.
• Students are required to exhibit professional and ethical conduct at all times.

TECHNICAL STANDARDS
Mayo School of Health Sciences accepts students who are highly qualified for its programs. To be considered for admittance you should exhibit strong qualifications for the health profession you wish to pursue. Applicants to programs must possess the following general qualities:
• Critical thinking skills
• Sound judgment
• Emotional stability and maturity
• Empathy for others
• Physical and mental stamina
• Ability to learn and function in a variety of settings
In addition to the general standards described above, the Radiation Therapy Program has additional specific standards, as the duties of a radiation therapist are physically demanding. In order to perform regular duties, you must be able to:

- Routinely lift 20 pounds over your head (blocks, treatment cones and other treatment devices)
- Stand on your feet more than 80 percent of the time
- Push and pull, bend and stoop, and kneel or squat routinely
- Push standard wheelchairs or carts and assist in transferring patients onto and off of treatment tables
- Visually align patients, equipment and film while in dim lighting
- Distinguish colors on computer screens and patient markings
- Monitor patients during treatment visually and via audio monitors
- Hear and identify various equipment and background sounds during equipment operations
- Input patient treatment data into treatment consoles and computers using keyboards
- Communicate effectively, orally and in writing, with patients and staff members
- Read and apply patient set up instructions as stated in treatment charts
- Organize and accurately perform the individual steps in a simulation or treatment procedure in the proper sequence
- Interact with immunosuppressed patients and patients who may have a communicable disease
- Fabricate patient-shielding blocks, which may contain heavy metals and produce vapors that may cause skin rashes or respiratory irritation in hypersensitive individuals

Radiation therapists may be exposed to low levels of ionizing radiation during their careers.

You must be able to perform the essential functions of the profession and meet the standards of the curriculum. Students seeking exceptions to these standards or reasonable accommodations should initiate their request with the program’s director.
Application Process

POSITIONS

Five to eight candidates are selected each year for the Radiation Therapy Program at Mayo Clinic in Rochester on a competitive basis. Classes begin in September.

APPLY

• To apply to the program, please submit:

  1. A completed Mayo School of Health Sciences application form
  2. Official transcripts from high school and all postsecondary schools attended after high school, including the radiography program
  3. Three letters of recommendation (see online application for recommendation forms or request paper copies) from:
     • Radiography Program Director
     • Radiography Clinical Instructor or Current Radiology Supervisor if you are a Registered R.T.(R)
     • Additional work reference or personal reference
  4. A nonrefundable $25 application fee

Please submit transcripts, recommendations (if in paper), and fee payment in one envelope and mail to:

Mayo Clinic College of Medicine
Mayo School of Health Sciences
200 First Street, SW
Siebens 11
Rochester, MN 55905

Your application and all supporting documentation must be received by February 1 of the year you wish to begin classes.

If you are considered for an appointment, you will be invited to visit Mayo Clinic in Rochester for a personal interview with the program director and selected faculty.

Appointment letters are mailed approximately April 1. Your reply is requested within 10 days after you receive the appointment letter.

Students submit a separate application to the University of Minnesota to enroll in courses taught by the University or for admission into the Bachelor of Applied Science in Radiation Therapy (BAS-RT) Program.
To apply to the University of Minnesota, submit online the University’s Application for Transfer Admission located at http://admissions.tc.umn.edu/ or request a paper copy by calling (612) 625-2008 or (800) 752-1000. When completing the transfer application, under the Intended Major section insert “Radiation Therapy” and under the Intended College section insert the “College of Continuing Education.”

Current University of Minnesota students must complete a Change of College Form available in any University Student Services Office or online at http://www.onestop.umn.edu/registrar/majors

Submit official college transcripts to the Office of Admissions on the University of Minnesota Twin Cities campus (see application for address).

Mayo School of Health Sciences upholds all federal and state laws that preclude discrimination on the basis of race, sex, age, religion, national origin, marital status, sexual orientation, disabilities or veteran’s status.

The school is committed to developing and maintaining the very best education programs. Changes may be made to the curriculum and other aspects of this program as necessary to assure the highest-quality training.

Tuition & Financial Aid

PROGRAM COSTS

A $25 nonrefundable MSHS application fee is due upon submission of the application documents.

Tuition for the two-year Radiation Therapy Program is paid to University of Minnesota and is subject to change. Please contact the program director for further information.

You are required to purchase your textbooks. You are also required to purchase navy blue scrub attire prior to the program start date.

You are responsible for providing your living accommodations and transportation.

You may hold outside employment during the program, if it does not conflict with your program responsibilities.
FINANCIAL AID

The Mayo Clinic Student Financial Aid Office can provide more details about the financial aid offered for the Radiation Therapy Program.

Financial aid also may be available from the University of Minnesota’s financial aid office.

Radiation Therapy Career Overview

FIELD DESCRIPTION

Radiation therapy involves treating disease with penetrating beams of high-energy radiation. For example, radiation therapy is used to treat cancer - alone or in conjunction with surgery and/or chemotherapy. Radiation therapists are highly skilled members of the cancer management team. They are responsible for accurately recording, interpreting and administering the treatment prescribed by radiation oncologists. During treatment, therapists help physicians use fluoroscopy, X-ray films or CT scans to localize and outline anatomical areas requiring treatment.

Radiation therapists have continual contact with patients for the course of their treatment, educating them about treatment and simulation procedures and potential radiation side effects. Monitoring and observing each patient’s clinical progress and emotional needs also are part of the therapist’s daily routine. The therapist, as a member of the health-care team, refers patients to physicians, nurses or social service professionals when necessary.

CAREER OPPORTUNITIES

Career opportunities for radiation therapists are excellent. Jobs are available in all areas of the country, both rural and metropolitan. Salaries are competitive with other health-care professions that require similar levels of education.

Radiation therapists are employed in hospitals, universities and clinics. After further study, you may advance to positions such as chief therapist, education director or dosimetrist and to administrative positions.

EARNING POTENTIAL

According to a recent survey, radiation therapists’ starting salaries are between $40,000 and $50,000. Salary will depend on the employer and location.
PROFESSIONAL ORGANIZATIONS

Visit the following Web sites to learn more about radiation therapy:

- American Registry of Radiologic Technologists (www.arrt.org)
- American Society of Radiologic Technologists (www.asrt.org)
- Joint Review Committee on Educational Programs in Radiation Therapy (www.jrcert.org)

Program Contacts

For an application form or more information about the Radiation Therapy Program, please contact:

Kate Ray, Enrollment and Student Services Director
(507) 266-4077
(800) 626-9041
Fax: (507) 284-0656
E-mail: mshsenrollment@mayo.edu

or

Leila A. Bussman-Yeakel, Radiation Therapy Program Director
(507) 284-4148 or (507) 284-6151
E-mail: bussmanyeakel.leila@mayo.edu
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Mayo School of Health Sciences
Charlton Building, Desk R
200 First Street SW
Rochester, MN 55905

or

Faith Zimmerman, University of Minnesota Rochester
Radiation Therapy Program Advisor
(507) 280-2834
Fax: (507) 280-2820
E-mail: faith.zimmerman@roch.edu

You can also request more information on education programs offered by Mayo School of Health Sciences.