

RADIOLOGIC STUDIES

The mission of St. Catherine University's radiologic studies department is to develop ethically responsible highly skilled radiation therapists instilled with a sense of professionalism, compassion and sensitivity.

Radiation therapy students are provided a coordinated and comprehensive didactic and clinical environment designed to maximize each student's educational experience. Small class size and individualized hands-on training prepare students in a wide variety of treatment and imaging techniques using state of the art technology.

Critical thinking and communication skills necessary to understand and apply concepts related to the art and science of radiation therapy and multidisciplinary cancer care prepare students for successful career opportunities.

Bachelor's Degree

- Radiation Therapy - BA, BS (<http://catalog.stkate.edu/undergraduate/health/radiologic-studies/radiation-therapy-ba-bs>)

RTT 3010 Introduction to Radiation Therapy – 2 credits

This course is designed to provide the student with a basic overview of radiation therapy and its role in medicine. Students will be oriented to academic and administrative structures, department personnel and physical structure, common medical terminology, hospital and departmental safety procedures, medical law and ethics, and to the profession as a whole. Treatment and simulation equipment and methods, including CT simulation and various imaging technologies will be reviewed and discussed in terms of its application to radiation oncology.

Prerequisite: Admission into the radiation therapy major.

RTT 3015 Principles of Oncology I – 3 credits

The radiation therapist must be knowledgeable in the concepts important to the practice of radiation therapy. These include the cancer process and radiation therapy interventions. This course examines concepts related specifically to cancer treatment with a focus on methods of improving therapeutic advantage. Technical aspects of simulation and treatment delivery are expanded upon. Treatment related side effects and their management as well as issues relative to caring for the cancer patient.

Prerequisite: Acceptance into the radiation therapy major.

RTT 3022 Radiation Therapy Physics I – 2 credits

This course will instruct students the principles of radiation physics and its medical uses. This includes discussion of structure of matter, x ray production, imaging in radiation therapy, clinical x-ray generators and external beam radiation therapy units, interactions of radiation with matter, measurement and calculation of absorbed dose, dose distribution and scatter analysis, radiation protection/safety and quality assurance. Pertinent mathematics and basic physics will be reviewed.

Prerequisite: Acceptance into the Radiation Therapy Program.

RTT 3025 Pathology – 2 credits

This course will enhance the student's knowledge of general immunology and pathology combined with disease concepts, theories of disease causation and system pathophysiologic disorders most frequently encountered in radiation therapy clinical practice.

Prerequisite: Admission into the radiation therapy major.

RTT 3030 Patient Care in Radiation Oncology – 2 credits

This course provides the student with basic concepts of patient care, including physical and psychological concerns. Vital sign determination, emergency procedures, asepsis, infection control, and tube management will be discussed. Other influencing factors of patient health will be identified. Medical terminology relative to radiation oncology is included as well.

Prerequisite: Acceptance into the Radiation Therapy Program.

RTT 3035 Clinical Practicum I – 3 credits

This course provides hands-on training in the clinical aspects of radiation therapy. This includes treatment procedures and the operation of state-of-the-art radiotherapy equipment to deliver radiation safely and accurately. It will begin to develop the student's skills toward competency as an entry-level radiation therapist. Students will learn to interact professionally, ethically and responsibly with staff and patients.

Prerequisite: Admission to the radiation therapy major.

RTT 4015W Principles of Oncology II – 3 credits

This course examines concepts related specifically to cancer treatment with a focus on methods of improving therapeutic advantage. Technical aspects of simulation and treatment delivery are expanded upon. Treatment related side effects and their management as well as issues relative to caring for the cancer patient will be discussed. Students will complete writing assignments tailored to radiation oncology, including a research paper to enhance their professional growth via inquiry and evaluation of an issue or therapeutic approach.

Prerequisites: RTT 3015, RTT 3020 or RTT 3022, RTT 3025, RTT 3030, RTT 3035. Offered in the College for Adults.

RTT 4022 Radiation Therapy Physics II – 4 credits

This course will cover different radiation therapy/medical physics applications. This will include ongoing discussion of x ray production and medical imaging such as CT, PET and MRI. This course will instruct students in the aspects of central axis, 2D and 3D dose distribution. Concepts related to dose calculation and the calibration of megavoltage treatment units will be discussed. Students will learn to apply the principles of physics discussed in their respective programs in the areas of monitor unit calculations and external beam treatment planning, brachytherapy, and special procedures. Also offered under PHYS 4022. Prerequisites for RTT students: RTT 3010, RTT 3015, RTT 3020 or 3022, RTT 3025, RTT 3030, RTT 3035. Prerequisites for PHYS students: PHYS 1110, PHYS 1120, PHYS 2250, MATH 1140.

RTT 4025 Dosimetry and Treatment Planning – 2 credits

This course is designed to instruct students regarding the factors that influence and govern clinical planning of patient radiation treatment. Included are isodose descriptions, patient contouring, dosimetric calculations, compensation and clinical application of treatment beams. Optimal treatment planning is emphasized along with particle beams. Advanced radiation oncology technology processes and procedures are discussed.

Prerequisites: RTT 3015, RTT 3020 or RTT 3022, RTT 3025, RTT 3030, RTT 3035. Offered in the College for Adults.

RTT 4030 Sectional Anatomy – 2 credits

This course is designed to identify the location and unique structures of each cranial/ facial bone. Students will do all of the following: List and describe sections of the brain. List and identify sections of the spine. Identify the structures of the atlas, axis, cervical, thoracic, and lumbar vertebrae, sacrum and coccyx. List and identify structures with in the thoracic, abdominal and pelvic cavities. Identify branches of the abdominal aorta. Identify and describe the anatomy of the upper and lower extremities.

Prerequisites: RTT 3010, RTT 3015, RTT 3020 or RTT 3022, RTT 3025, RTT 3035.

RTT 4035 Radiobiology - Protection – 2 credits

This course provides the student with the principle of cellular, tissue and whole body response to radiation and the principles of radiation protection. Discussion will include such influencing factors as tissue sensitivity and environmental factors.

Prerequisites: RTT 3010, RTT 3015, RTT 3020, RTT 3025, RTT 3035.

RTT 4040 Topics in Radiation Therapy – 3 credits

This course is designed to provide a variety of subjects of importance to radiation therapists. Research methodology and human participant research will be covered. Operational Issues, Quality Management, Billing and Coding in radiation therapy will be presented. HIPAA and confidentiality in healthcare will be discussed. Students will participate in a review of radiation therapy material and examinations designed to enhance the student's knowledge in preparation for the ARRT national board exam. Resumes, interviewing skills and job preparedness will be presented and practiced.

Prerequisites: RTT 4015W, RTT 4020 or RTT 4022, RTT 4025, RTT 4030, RTT 4035, RTT 4045.

RTT 4045 Clinical Practicum II – 4 credits

This course provides hands-on training in the clinical aspects of radiation therapy. This includes treatment procedures and the operation of state-of-the-art radiotherapy equipment to deliver radiation safely and accurately. It will begin to develop the student's skills toward competency as an entry-level radiation therapist. Students will learn to interact professionally, ethically and responsibly with staff and patients.

Prerequisites: RTT 3015, RTT 3020 or RTT 3022, RTT 3025, RTT 3030, RTT 3035. Offered in the College for Adults.

RTT 4050 Clinical Practicum III – 5 credits

This course provides hands-on training in the clinical aspects of radiation therapy. This includes treatment procedures and the operation of state-of-the-art radiotherapy equipment to deliver radiation safely and accurately. It will begin to develop the student's skills toward competency as an entry-level radiation therapist. Students will learn to interact professionally, ethically and responsibly with staff and patients.

Prerequisites: RTT 4015W, RTT 4020 or RTT 4022, RTT 4025, RTT 4030, RTT 4035, RTT 4045.

RTT 4055 Clinical Practicum III – 6 credits

This course provides hands-on training in the clinical aspects of radiation therapy. This includes treatment procedures and the operation of state-of-the-art radiotherapy equipment to deliver radiation safely and accurately. It will begin to develop the student's skills toward competency as an entry-level radiation therapist. Students will learn to interact professionally, ethically and responsibly with staff and patients. Students will complete a portfolio project containing several artifacts to demonstrate growth over time in the program and present it to faculty and the class.

Prerequisites: RTT 4015W, RTT 4022, RTT 4025, RTT 4030, RTT 4035, RTT 4045.