Radiation therapy technology is a health care discipline which utilizes ionizing radiation for the treatment of malignant diseases. This field requires a basic understanding of and interest in science, especially mathematics and physics, as well as emotional maturity and a desire to assist in the management of patient care. A radiation therapist has the unique opportunity to blend knowledge and skills of mathematics, medical science and psychology in his or her everyday work. The therapist comes to know patients over a period of several months and becomes an important presence in their health care, a continued contact that is the source of much satisfaction and professional pride. The Bachelor of Science Degree program in Radiation Therapy Technology at Wayne State University is designed to prepare students for the technical, theoretical and psychological aspects of this career.

Radiation therapists are typically employed in hospitals, clinics, educational institutions, and commercial equipment corporations as staff therapists, clinical supervisors, administrators, educators and technical marketing personnel. A radiation therapist is able to:

- operate sophisticated radiation equipment to deliver a planned course of radiation therapy;
- assist the physicist in quality assurance and in treatment planning procedures, and in the calibration of equipment;
- observe the clinical progress of the patient undergoing radiation therapy, and recognize when a patient’s condition requires the attention of a physician; and
- assist in providing psychosocial support for patients who are dealing with the stress of their illness.

KELLER, ROSANN: MEd, B.S., Wayne State University; Clinical Assistant Professor

KEMPA, ADAM: M.Ed., Wayne State University; B.S., Oklahoma State University; Clinical Assistant Professor and Program Director

- Radiation Therapy Technology (B.S.) (http://bulletins.wayne.edu/undergraduate/college-pharmacy-health-sciences/radiation-therapy-technology/radiation-therapy-technology-bs)

RT 3000 Concepts of Clinical Care Cr. 3
Procedures and ethics related to the care and examination of the radiation oncology patient. Topics include: basic pharmacology, drug administration, pain management, treatment side effects and their management. Offered Fall.

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

Course Material Fees: $15

RT 3010 Introductory Radiation Physics Cr. 3
Basic introduction of radiation physics including the x-ray machine, physical principles and circuitry; principles of mathematics. Offered Fall.

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

Prerequisite: RT 3010

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

RT 3110 Clinical Aspects of Radiation Therapy Cr. 3
Basic concepts in oncology and radiation therapy technology. Topics include: cancer statistics, neoplasia, and principles of treatment and dosage. Offered Fall.

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

RT 3140 Topographic Anatomy and Medical Imaging Cr. 3
Procedures for imaging human structure and their relevance to radiation therapy; topographic and cross sectional anatomy, identification of anatomic structures as demonstrated through various imaging modalities and human anatomy lab sessions; fundamentals of radiographic exposure techniques and film processing. Offered Winter.

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

Course Material Fees: $10

RT 3200 Therapeutic Interactions in Oncology Care Cr. 2
Issues related to professional interaction with oncology patients. Impact of cancer diagnosis on patient and family; subsequent role of radiation therapist. Approaches to effective communication. Offered Spring/Summer.

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

Course Material Fees: $5

RT 3310 Clinical Practicum I Cr. 3
Introduction to clinical radiation therapy. Closely supervised patient-related activities. Emphasis on development of interpersonal communication skills in the clinical setting; medical terminology. Offered Fall.

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

Course Material Fees: $59

RT 3320 Clinical Practicum II Cr. 4
Closely supervised practice in the delivery of prescribed doses of radiation utilizing common radiation equipment. Observation and performance of clinical care procedures; Development of communication skills in patient/therapist relationships. Correlation of medical imaging techniques to diagnostic workup and treatment planning. Completion of clinical competency requirements. Offered Winter.

Prerequisite: RT 3310

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

RT 3330 Clinical Practicum III Cr. 4
Expanded supervised practice in the delivery of radiation therapy treatments. Submission of essay on radiation oncology topic. Completion of clinical competency requirements. Offered Spring/Summer.

Prerequisite: RT 3320

Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
RT 4110 Clinical Radiation Oncology Cr. 4
General presentation of malignant conditions, their etiology and methods of treatment; specific radiation treatment methodology including technical parameters of field size and direction, dosage, blocking, and patient positioning. Offered Fall.
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $10

RT 4120 Basic Clinical Dosimetry Cr. 4
Basic concepts of clinical dosimetry and treatment planning; various external beam techniques, depth dose data, and summation of isodose curves. Offered Winter.
Prerequisite: RT 4110 with a minimum grade of C
Restriction(s): Enrollment limited to students in the BS in Radiation Therapy Tech or BS in Radiation Therapy Tech programs; enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $10

RT 4140 Oncologic Pathology Cr. 2
Basic principles of neoplasia, including types of growth, causative factors, biological behavior, and significance of staging procedures. Pathology of radiation injury. Offered Fall.
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $10

RT 4150 Radiobiology of Radiation Oncology Cr. 2
Biological effects of ionizing radiation on living tissue. Cell and tissue radiosensitivity; radiation syndromes and related effects. Basic radiobiological principles of radiation oncology and radiation protection. Offered Winter.
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

RT 4220 Radionuclide Physics Cr. 3
Natural radioactivity; isotopes and nuclear structure; techniques of radiation measurement. The clinical use of radionuclides. Radiation safety. Offered Fall.
Prerequisite: RT 3020 with a minimum grade of C
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

RT 4240 Radiation Therapy Technology Seminar Cr. 3
Issues relevant to the practice and profession of radiation therapy technology explored through group discussion and case studies. Topics include: psychosocial, cultural, economic, physical, and educational factors which affect the patient; professional, administrative, legal, and bioethical issues which influence professional practice. Offered Winter.
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $15

RT 4300 Quality Assurance Cr. 2
Principles and application of a comprehensive quality assurance program, addressing general clinical and physics factors. Contents include: tasks to be performed, with their frequency and acceptable limits; model implementation program; and legal implications. Lecture and laboratory settings. Offered Spring/Summer.
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $10

RT 4350 Clinical Practicum IV Cr. 4
Continued supervised practice in a wide spectrum of clinical activities. Submission of a critical bibliography from current literature of radiation therapy, cancer management and related areas. Completion of clinical competency requirements. Offered Fall.
Prerequisite: RT 3330 with a minimum grade of C
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $59

RT 4360 (WI) Clinical Practicum V Cr. 4
Continued clinical practice under limited supervision. Submission of essay on radiation oncology topic. Completion of clinical competency requirements. Satisfies the University General Education Writing Intensive Course in the Major requirement. Offered Winter.
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.

RT 4370 Clinical Practicum VI Cr. 4
Continued clinical practice under minimal supervision. Practice of procedures related to the development of various treatment plans and methods of treatment planning. Submission of report on quality assurance activities. Completion of clinical competency requirements. Offered Spring/Summer.
Prerequisite: RT 4360
Restriction(s): Enrollment limited to students in the Pharmacy and Health Sciences.
Course Material Fees: $20

RT 5650 Pathophysiology for Health Sciences Cr. 3
Fundamental knowledge of the nature of disease for the health sciences student; physiologic and morphologic changes accompanying disease processes; mechanisms of repair and recovery. Offered Winter.
Restriction(s): Enrollment limited to students in the BS in Radiation Therapy Tech program; enrollment limited to students in the Pharmacy and Health Sciences.
Equivalent: OT 5650, PT 5650

RT 5990 Directed Study in Radiation Therapy Technology Cr. 1-5
Production of a paper, written assignment, or presentation to develop critical thinking, research, writing and presentation skills. Focus on career options within the field. Offered Every Term.
Restriction(s): Enrollment limited to students in the BS in Radiation Therapy Tech program; enrollment limited to students in the Pharmacy and Health Sciences.
Repeatable for 5 Credits