

RADIATION THERAPY (RTT)

RTT-1000 Introduction to Radiation Therapy (1-12 Credits)

This course is designed to provide an overview of cancer and the specialty of radiation therapy. The current aspects of cancer treatment will be covered. The roles and responsibilities of the radiation therapist will be discussed. In addition, treatment prescription, techniques and delivery will be covered.

Typically offered: All Sessions

RTT-1010 Medical Terminology (1-12 Credits)

This course is designed to introduce the student to terms used by health care professionals. A programmed learning approach to familiarize the student with various medical words, roots, prefixes, suffixes and their combining forms including abbreviations and their applications is utilized.

Typically offered: All Sessions

RTT-1020 Anatomy and Physiology I (2-12 Credits)

This course will introduce the student to anatomy of the human body. Special attention will be given to the sites where cancer may originate and spread.

Typically offered: All Sessions

RTT-1030 Introduction to Physics I (3-12 Credits)

This course is designed to review mathematical concepts and establish a basic knowledge of atomic structure. Also presented is the nature and characteristics of radiation.

Typically offered: All Sessions

RTT-1040 Patient Care I (2-12 Credits)

This course is designed to provide the basic concepts of patient care, including consideration for the physical and psychological needs of the patient and family. Emergency patient care procedures are described, as well as infection control procedures using standard precautions. The role of the radiation therapist in patient education is identified.

Typically offered: All Sessions

RTT-1050 Clinical Radiation Therapy (2-12 Credits)

This course is designed to prepare students to understand the basic concepts of radiation therapy treatment. It provides the student an opportunity to prepare set-up instructions for the competencies they are required to demonstrate.

Typically offered: All Sessions

RTT-1050L Clinical Radiation Therapy Lab (1-12 Credits)

This course is designed to prepare students to practice the basic concepts of radiation therapy treatment. It provides the student an opportunity to prepare set-up instructions for the competencies they are required to demonstrate.

Typically offered: All Sessions

RTT-1080 Clinical Education I (2-5 Credits)

This course is designed to provide an introduction to the hands-on practice of radiation therapy. This will be accomplished by 5 weeks of intensive on-campus clinical preparation which will include Radiation Safety, Blood Borne Pathogens, CPR, basic introduction to clinical equipment, Clinical Vocabulary, Topographical Anatomy, Linear Accelerator, History of Radiation, Medical Imaging, Brachytherapy, and CT Simulation. Students will then be introduced to the clinical setting where they will be oriented to the facility and observe clinical staff in performance of their duties. Initially through observation, and eventually by demonstrating stated objectives, the student will apply principles learned to the clinical setting. The student will be given the opportunity to acquire specific patient care skills. Student achievement of course objectives is documented by the completion of mid-term and end-of-term evaluations.

Typically offered: All Sessions

RTT-1090 Ethics and Law (1-12 Credits)

This course is designed to provide sequential development, application, analysis, integration and evaluation of ethical concepts and theories as they relate to the practice of radiation therapy. It is also designed for the student to develop and use problem solving and critical thinking skills in discussion of the sources of law, causes of action and litigation processes related to the professional practice of radiologic technology.

Typically offered: All Sessions

RTT-1100 Imaging and Processing (2-12 Credits)

This course is designed to establish a knowledge base in factors that govern and influence the production and recording of digital and/or radiographic images for patient simulation, treatment planning and treatment verification in radiation oncology. Radiation oncology imaging equipment and related devices will be included.

Typically offered: All Sessions

RTT-1120 Anatomy and Physiology II (2-12 Credits)

This course will continue with the introduction of the student to the anatomy of the human body. Special attention will be given to the sites where cancer may originate and spread.

Typically offered: All Sessions

RTT-1130 Introduction to Physics II (2-12 Credits)

This course is designed to expound on the student's knowledge of atomic structure and terminology. The fundamentals of electromagnetic radiation, the characteristics of radiation, its interactions with matter and the units of measurement of ionizing radiation are presented.

Typically offered: All Sessions

RTT-1141 Patient Care II (2-12 Credits)

This course is designed to provide the student with advanced concepts of patient care. Trauma and basic concepts of pharmacology are discussed. The theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications is included. The appropriate delivery of patient care during these procedures is emphasized.

Typically offered: All Sessions

RTT-1150 Introduction to Radiation Oncology (2-12 Credits)

This course is designed to provide the student with the basics of clinical radiation oncology and the specialty of radiation therapy. The current aspects of cancer treatment will be covered. The roles and responsibilities of the radiation therapist will be discussed. In addition, treatment prescription, techniques and delivery will be covered.

Typically offered: All Sessions

RTT-1160 Radiation Protection (1-12 Credits)

This course is designed to present principles of radiation protection and safety for the patient, public and radiation therapist. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations are incorporated. Specific responsibilities of the radiation therapist are discussed, examined and evaluated.

Typically offered: All Sessions

RTT-1170 Pathophysiology (2-12 Credits)

This course is designed to introduce the student to the concept of diseases. Emphasis will be placed on different types of growths, and causative factors. Etiology and clinical manifestations of disease in all systems will also be described.

Typically offered: All Sessions

RTT-1180 Clinical Education II (2-5 Credits)

This course is intended to provide an introduction to the hands-on practice of radiation therapy. Initially through observation, and eventually by demonstrating stated objectives, the student will apply principles learned in Orientation, Introduction to Radiation Therapy, and Patient Care, to the clinical setting. The student will be given the opportunity to acquire specific patient care skills in the treatment room or simulator to which he/she is assigned. Student achievement of course objectives is documented by the completion of mid-term and end-of-term evaluations. Students assigned to simulation must demonstrate simulator objectives and perform the related competencies by the end of the term.

Typically offered: All Sessions

RTT-1191 Treatment Planning I (2-12 Credits)

This course is designed to establish factors that influence and govern clinical planning of patient treatment. Included are isodose description, dosimetric calculations, compensation and clinical application of treatment beams. Attention is given to the rationale, theory and calculations for each method. Class demonstrations and projects are incorporated to complement specific content areas and are focused on clinical applications.

Typically offered: All Sessions

RTT-1280 Clinical Education III (2-5 Credits)

This course is designed to provide an opportunity for the student to apply his or her recently completed didactic coursework to the clinical setting. In addition to expanded objectives and competencies on the treatment units, the student will present a case study and research paper based on the theoretical content researched. Students assigned to simulation must demonstrate simulator objectives and perform the related competencies by the end of the term.

Typically offered: All Sessions

RTT-2020 Radiation Biology (2-12 Credits)

This course is designed to present basic concepts and principles of radiation biology. The interactions of radiation with cells, tissues and the body as a whole, and resultant biophysical events will be presented. Discussion of the theories and principles of tolerance dose, time-dose relationships, fractionation schemes and the relationship to the clinical practice of radiation therapy will be discussed, examined and evaluated.

Typically offered: All Sessions

RTT-2031 Radiation Therapy Physics (2-12 Credits)

This course is designed to review and expand concepts and theories in the radiation physics course. Detailed analysis of the properties of radiation, nuclear transformations, and interactions of ionizing radiation are emphasized. Also presented are treatment units used in external radiation therapy, measurement and quality of ionizing radiation produced, absorbed dose measurement, dose distribution and scatter analysis.

Typically offered: All Sessions

RTT-2040 Radiation Oncology Nursing (2-12 Credits)

This phase of the course will construct a strong foundation in the area of patient care expressly for patients undergoing a course of radiation therapy. This will include skin care, expected and unexpected reactions, as well as psychological considerations. The second phase of the course will present the basics of chemotherapy and how it may affect care required for the radiation therapy patient.

Typically offered: All Sessions

RTT-2050 Radiation Therapy Techniques I (2-12 Credits)

This course is designed to examine and evaluate the management of neoplastic disease using knowledge in arts and sciences, while promoting critical thinking and ethical clinical decision-making. The radiation therapist's responsibility in the management of neoplastic disease will be examined and linked to the skills required to analyze complex issues and make informed decisions while appreciating the character of the profession.

Typically offered: All Sessions

RTT-2080 Clinical Education IV (2-5 Credits)

This course will provide an opportunity for the student to demonstrate mastery of treatment delivery. Emphasis is placed on the student's ability to monitor patient condition and reactions to treatment, and to instruct patients appropriately. Emphasis is placed on the student's ability to evaluate portal images and take appropriate action. The student will continue to demonstrate competencies and be responsible for all items on the competency evaluation including operating the machine console and documenting treatment. Students assigned to simulation must demonstrate simulator objectives and perform the related competencies by the end of the term.

Typically offered: All Sessions

RTT-2090 Quality Management & Operational Issues (2-12 Credits)

This course is designed to focus on the components of quality improvement (QI) programs in radiation oncology. The role of the various radiation therapy team members in continuous quality improvement will be discussed as well as the legal and regulatory implications for maintaining appropriate quality care. Human resource concepts and regulations impacting the radiation therapist will be examined. Billing and reimbursement issues pertinent to the radiation therapy department will be presented.

Typically offered: All Sessions

RTT-2141 Treatment Planning II (2-12 Credits)

This course is designed to review and expand concepts and theories in radiation physics and Treatment Planning I. Optimal treatment planning is emphasized along with particle beams. Stereotactic radiation, brachytherapy and emerging treatment technologies are presented.

Typically offered: All Sessions

RTT-2150 Radiation Therapy Techniques II (2-12 Credits)

This course is designed to examine and evaluate the management of neoplastic disease using knowledge in arts and sciences, while promoting critical thinking and the basis of ethical clinical decision making. Oncologic emergencies and management of such will be discussed. The radiation therapist's responsibility in the management of neoplastic disease will be examined and linked to the skills required to analyze complex issues and make informed decisions while appreciating the character of the profession.

Typically offered: All Sessions

RTT-2160 Cross-Sectional Anatomy (2-12 Credits)

This course is designed to introduce the student to medical imaging methods in use in radiation therapy today. The student will identify anatomical structures through several imaging formats. Anatomic relationships will be compared using topographical and cross-sectional anatomy.

Typically offered: All Sessions

RTT-2170 Principles of Ct in Radiation Therapy (2-12 Credits)

This course's content provides Radiation Therapy students with the principles related to Computed Tomography (CT) imaging.

Typically offered: All Sessions

RTT-2180 Clinical Education V (2-5 Credits)

For students assigned to a treatment unit, this course is designed to provide an opportunity for the student to demonstrate mastery of treatment delivery. Emphasis is placed on the student's ability to monitor patient condition and reactions to treatment, and to instruct patient appropriately. Emphasis is placed on the student's ability to evaluate portal images and take appropriate action. The student will continue to demonstrate competencies and be responsible for all items on the competency evaluation including operating the machine console and documenting treatment. Students assigned to simulation must demonstrate simulator objectives and perform the related competencies by the end of the term.

Typically offered: All Sessions

RTT-2190 Career Development (1-12 Credits)

This course is designed to introduce the student to a comprehensive approach to career development & planning. Students will examine self-awareness and career exploration which should then be incorporated into self-marketing techniques leading to long term effective career decision making. Students will be exposed to useful job searching techniques necessary in today's job marketplace.

Typically offered: All Sessions

RTT-2290 Registry Review (3-12 Credits)

This course is designed as a comprehensive review of the radiation therapy curriculum. It is designed to be both a review and detailed guide, with questions and answers, for students preparing to successfully pass the Registry examination administered by the ARRT. All subject areas will be reviewed and learning strategies discussed.

Typically offered: All Sessions