

# RADIATION THERAPY (RADT)

## **RADT 101 Introduction to Radiologic Sciences (1)**

Provides an overview of the professions of radiography, radiation therapy, and nuclear medicine technology. Emphasis is placed on educational preparation, career planning and professional development in the radiologic sciences. Clinical observations in health care settings are included.

## **RADT 102 Medical Terminology (1)**

Explores a body systems approach to the language of medicine and the radiologic sciences. Course emphasizes clinical applications and use of terms in interpretation of orders and reports.

## **RADT 305 Radiation Therapy Clinical Experience I (3)**

Provides students with an introductory understanding of the functioning of the Radiation Oncology Department while observing therapist/patient interaction.

## **RADT 306 Radiation Therapy Clinical Experience II (4)**

Provides students with insight into treatment procedures, calculations, and treatment devices used on cancer patients.

## **RADT 310 Introduction to Clinic Radiologic Science (2)**

Provides an overview of radiography and radiation therapy and their role in health care delivery. The course outlines the structure of the health system and roles of various departments and health professionals. The course also includes an introduction to the topics of equipment and procedures, radiation safety, professionalization, ethics and law and the history of the radiologic sciences.

## **RADT 312 Principles and Practices of Radiation Therapy (1)**

Provides students with an introduction to the unifying themes that underlie Radiation Therapy as a treatment modality and patient care.

## **RADT 330 Methods of Patient Care (3)**

Covers concepts of routine and emergency patient care procedures, including infection control, patient assessment and education, death and dying, pharmacology and CPR. Consideration for the physical, developmental and psychological needs of the patient and family is emphasized.

## **RADT 335 Ethics and Law in Radiologic Science (1-2)**

Provides students with an understanding of the legal and ethical responsibilities of professional practice. Covered topics include ethical behavior, issues and dilemmas, interacting with the terminally ill, scope of practice, elements of malpractice and risk management, health care distribution, student rights, and future challenges.

## **RADT 341 Oncology I (2)**

Provides students with the fundamentals of clinical applications in Radiation Oncology according to malignant and benign conditions by individual tumor sites by pathological conditions.

## **RADT 350 Radiation Physics I (2)**

Explores the properties and medical applications of radiation including the electromagnetic spectrum, radioactivity and half-life, x-ray production, effects of technique selection on x-ray exposure, interaction of radiation with matter, and design of radiographic equipment. Emphasis is placed on clinical application of concepts in the safe operation of high voltage radiologic equipment.

## **RADT 356 Treatment Planning I (2)**

Discusses factors that influence and govern clinical planning of patient treatments; includes treatment machines, isodose descriptions, patient contouring, radiobiologic considerations, dosimetric calculations, tissue compensation, brachytherapy, and clinical applications.

## **RADT 357 Radiation Therapy Physics I (2)**

Designed to review and expand contents and theories in the radiation physics course. Topics expanded upon are: detailed analysis of the structure of matter, properties of radiation, nuclear transformation, treatment units of external radiation, measurement and quality of ionizing radiation produced, absorbed dose measurement and distribution, and scatter analysis.

## **RADT 360 Radiobiology/Radiation Protection (2)**

Is an overview of the interaction of radiation with living systems, effects on organisms, and factors affecting biological responses. Covered topics include: early and late effects of radiation exposure and epidemiological studies of radiation and acute radiation syndromes. Included is content which provides the student with an overview of the principles and practices of radiation protection for the patient, personnel, and general public.

## **RADT 370 Radiographic Imaging I (3)**

Presents the devices and techniques of radiographic image production. Covered topics include: films and processing, beam filtration and restriction, intensifying screens, radiographic grids and technique selection. Emphasis is placed on clinical applications and the evaluation of radiographic quality. Course content includes laboratory and demonstrations.

**Restrictions:** Enrollment is limited to students with a major in Radiation Therapy.

## **RADT 380 Radiologic Procedures I (3)**

Explores anatomy review, positioning demonstration, and presentation of radiographs of the human body, so that the student learns radiographic examinations of the chest, abdomen, upper extremity, digestive system and urinary system. Course promotes student clinical competence in all assigned radiographic procedures and related anatomical and positioning theory and concepts.

## **RADT 381 Simulator Procedures I (1)**

Provides students with a concrete set of procedures with which to "simulate" the treatment setup before treatment begins.

## **RADT 405 Radiation Therapy Clinical Experience III (4)**

Provides the student with additional clinical insight into radiation therapy and is a continuation of RADT 306.

## **RADT 406 Radiation Therapy Clinical Experience IV (4)**

Provides the student with a summation of clinical experiences RADT 305, 306, 405 while demonstrating communication skills, professionalism and synthesis of treatment procedures and patient setups.

## **RADT 412 Principles and Practice of Radiation Therapy II (1-2)**

A continuation of RADT 312. Topics covered include treatment machines, radiation safety, radiobiology and care of the oncology patient.

## **RADT 413 Principles and Practice of Radiation Therapy III (2)**

A continuation of RADT 412. Topics include pharmacology, chemotherapy, calculations, patient care, and radiobiology for the radiation therapist.

## **RADT 416 Radiation Therapy Senior Seminar (1)**

Includes independent study, case studies, papers, professional journal review, journal writing, field trips and attendance at educational seminars and tournaments. Emphasizes the synthesis of information from across the curriculum, the development of communication skills and professionalization.

**RADT 420 Sectional Anatomy (3)**

Presents anatomy from a three dimensional perspective, emphasizing the location and relative position of body structures. A body section approach to transverse, sagittal, and coronal anatomy uses slides of cadaver cross sections, correlated line diagrams, and cross sectional images from Computed Tomography and Magnetic Resonance Imaging is used.

**RADT 441 Oncology II (2)**

Is a continuation of RADT 341. Oncology topics covered are skin cancers, central nervous system, head, and neck primaries, leukemia, Hodgkin's and non-Hodgkin's, lung, GI/GU, reproductive and other related topics.

**RADT 442 Oncology III (2)**

Is a continuation of RADT 441. Pathological oncology topics to be covered are tumors of the GI and GU tracts, reproductive organs for male and female, and other related topics.

**RADT 450 Quality Management (2)**

Establishes a protocol for a quality management program that incorporates all operations and functions of a radiation therapy facility/ service. Comprehensive nature of quality management will be discussed within the context of professional standards of care.

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**RADT 456 Treatment Planning II (2)**

A continuation of RADT 356. Optimal treatment planning is emphasized.

**RADT 457 Radiation Therapy Physics II (2)**

A continuation of RADT 357. There is special focus on radiation safety policy and procedures for external beam and brachytherapy procedures. Blended online and classroom delivery.

**RADT 461 Introduction To Health Service Administration (1)**

Provides the student with a comprehensive overview of the history, development and features of the U.S. health care delivery system.

**RADT 462 Intro to Health Serv Admin II (1)**

Provides the student with leadership, business and financial components of a health care organization.

**RADT 470 Computer Tomography and Digital Imaging (2)**

Covers advanced imaging equipment and theory related to fluoroscopic and digital radiographic imaging, computers and computer applications in medical imaging. Computerized tomography is also presented.

**RADT 481 Simulator Procedures II (1)**

Is a continuation of RADT 380 with a look at more complex treatment positioning. Students should be able to independently perform basic treatment positioning. Body sites to be covered are Hodgkin's, pelvis, and the breast.

**RADT 482 Simulator Procedures III (1)**

Is a continuation of RADT 481. At the completion of this course, the student must demonstrate proficiency in treatment setups and positioning in the simulator room with phantom and actual patients. A review of all body sites covered in the previous simulator clinic is accomplished.

**Restrictions:** Enrollment is limited to students with a major in Radiation Therapy.

**RADT 490 Radiation Therapy Registry Review (3)**

Is designed to prepare the student for certification. Areas pertinent to the ARRT examination will be covered. Mock exams and completion of the radiation therapy workbook is required. Successful completion of 4 mock registry examinations is a prerequisite for graduation.

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**RADT 496 Independent Study (1-3)**

This is an academic learning experience in which the student initiates, designs and executes the course under the supervision of the instructor. The student must have a 3.0 GPA or higher.