

# RADIATION THERAPY (RADT)

**RADT 4330 Introduction to Technical Radiation Oncology.** (Formerly 330) Content is designed to familiarize the student therapist with the technical aspects of radiography and radiographic equipment. Discussion will include orientation to the function and operation of radiographic equipment. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4331 Principles and Practice of Radiation Therapy I.** (Formerly 331) Content is designed to provide an overview of cancer and the specialty of radiation therapy. The medical, biological, and pathological aspect as well as the physical and technical aspects will be discussed. The roles and responsibilities of the radiation therapist, the treatment prescription, the documentation of treatment parameters and delivery will also be discussed. 3 semester credit hour/s.

**Campus:** LISLE

**RADT 4332 Pathology.** (Formerly 332) The course content is presented in two parts: general pathology and neoplasia. General pathology introduces basic disease concepts, theories of disease causation and system-by-system pathophysiologic disorders most frequently encountered in clinical practice. Neoplasia provides an in-depth study of new and abnormal development of cells. The processes involved in the development and classification of both benign and malignant tumors and site-specific information on malignant tumors is presented. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4333 Radiation Physics.** (Formerly 333) Content is designed to establish a basic knowledge of physics pertinent to developing an understanding of radiations used in the clinical setting. Fundamental physical units, measurements, principles, atomic structure, and types of radiation emphasized. Also presented are the fundamentals of x-ray generating equipment, x-ray production, and its interaction with matter. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4334 Clinical Practicum I.** (Formerly 334) Content is designed to provide sequential development, application, analysis, integration, synthesis, and evaluation of concepts and theories in radiation therapy. Through structured sequential assignments in clinical facilities, concepts of team practice, patient-centered clinical practice, and professional development shall be discussed, examined, and evaluated. This includes supervised clinical education, which offers a sufficient and well-balanced variety of radiation treatments, examinations, and equipment. Various rotations include: general radiation therapy treatment rooms, Simulator/CT simulator, Nursing Department, and Physics/Dosimetry Department. 3 semester credit hour/s.

**Designation:** Engaged Learning

**Campus:** LISLE

**RADT 4335 Medical Imaging.** (Formerly 335) Content is designed to establish procedures for imaging human structure and their relevance to radiation therapy. Topographic, radiographic, and cross-sectional anatomy will be studied and demonstrated through various imaging modalities. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4336 Introduction to Radiologic Sciences.** (Formerly 336) Content is designed to provide students with an overview of the foundations, concepts, history and theories in radiation therapy and the practitioner's role in the health care delivery system. The interrelatedness of standards of care, law, ethical standards and competence will be examined.

Radiation Therapy patient care content will provide the student with concepts and competencies in assessment and evaluation of the patient for service delivery. Psychological and physical needs and factors affecting treatment outcome will be presented and examined. Routine and emergency care procedures will be presented. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4337 Radiation Safety and Protection.** (Formerly 337) Content is designed to present basic principles of radiation protection and safety for the 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, performed and evaluated. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4338 Principles and Practice of Radiation Therapy II.** (Formerly 338) Content is designed to examine and evaluate the management of neoplastic disease using knowledge in arts and sciences, while promoting critical thinking and the basics of ethical decision making. The epidemiology, etiology, detection, diagnosis, patient condition, treatment, and prognosis of neoplastic disease will be presented, discussed, and evaluated in relationship to histology, anatomical site, and patterns of spread. 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. 3 semester credit hour/s.

**Designation:** Writing Intensive

**Campus:** LISLE

**RADT 4339 Technical Radiation Oncology II.** (Formerly 339) Content is designed to provide the student therapist with knowledge of the technical aspects of radiation therapy. Discussion will include treatment modalities and the distinctive properties of each patient's simulation and treatment. This will also include basic hand calculations. 3 semester credit hour/s.

**Campus:** LISLE

**RADT 4340 Radiation Therapy Physics.** (Formerly 340) Content is designed to review and expand concepts and theories in the radiation physics course. Detailed analysis of the structure of matter, properties of radiation, nuclear transformations, x-ray production, and interactions of ionizing radiation are emphasized. Also presented are types of treatment units used in external radiation therapy, measurement and quality of ionizing radiation produced, absorbed dose measurement, dose distribution, and scatter analysis. Also included in this course are factors that influence and govern treatment planning. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4341 Quality Assurance and Healthcare Operations.** (Formerly 341) This course will focus on the evolution of quality management (QM) programs and continuing quality improvement in radiation oncology. A comprehensive overview of linear accelerator and CT QA will be presented. Topics covered in this course include: the radiation therapist's role in fostering a culture of safety, daily, monthly and annual quality assurance procedures for linear accelerators and CT simulators, record keeping, and linear accelerator acceptance and commissioning. Regulatory agencies, information systems, and legal issues related to quality assurance will also be presented. This course also examines the US healthcare system and provides an overview of healthcare operations with emphasis on insurance, billing, reimbursement, continuous quality improvement (CQI), project management, Human Resources, accreditation, and licensing and certification. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4343 Clinical Practicum II.** (Formerly 343) Content is designed to provide sequential development, application, analysis, integration, synthesis, and evaluation of concepts and theories in radiation therapy. Through structured sequential assignments in clinical facilities, concepts of team practice, patient-centered clinical practice, and professional development shall be discussed, examined, and evaluated. This includes supervised clinical education, which offers a sufficient and well-balanced variety of radiation treatments, examinations, and equipment. Various rotations include: general radiation therapy treatment rooms, Simulator/CT simulator, Nursing Department, and Physics/Dosimetry Department. 3 semester credit hour/s.

**Designation:** Engaged Learning

**Campus:** LISLE

**RADT 4344 Management and Methods of Patient II.** (Formerly 344) Continuation of RADT 4336 Management and Methods of Patient Care I. 2 semester credit hour/s.

**Campus:** LISLE

**RADT 4345 Radiation Biology.** (Formerly 345) Content 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. 1 semester credit hour/s.

**Campus:** LISLE