

Radiation Therapy

Princ & Practice of Radiation Therapy I

RATH 2301 - 4 Credits

Provides an overview of cancer and the specialty of radiation therapy. The medical, biological and pathological aspects as well as the physical and technical aspects are discussed. Roles and responsibilities of the radiation therapist, the treatment prescription, the documentation of treatment parameters and delivery are also discussed. Prerequisite: Admission to Radiation Therapy program or consent of instructor (4 lecture hours)

Princ & Practice of Radiation Therapy II

RATH 2302 - 4 Credits

Examines the management of neoplastic disease from a multidisciplinary perspective. The epidemiology, etiology, detection, diagnosis, patient condition, treatment and prognosis of neoplastic disease are 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 is examined and linked to the skills required to analyze complex issues and make informed decisions. Prerequisite: Admission to Radiation Therapy program and Radiation Therapy 2301, 2321, and 2331 with a grade of C or better or equivalent or consent of instructor (4 lecture hours)

Princ & Practice Radiation Therapy III

RATH 2303 - 4 Credits

Establishes factors that influence and govern clinical planning of patient treatment. Encompassed are isodose descriptions, patient contouring, radiobiologic considerations, dosimetric calculations, compensation and clinical application of treatment beams. Optimal treatment planning is emphasized along with particle beams. Stereotactic and emerging technologies are presented. Prerequisite: Radiation Therapy 2302, 2311, 2322 and 2332 with a grade of C or better or equivalent or consent of instructor (4 lecture hours)

Radiation Therapy Physics

RATH 2310 - 3 Credits

Establishes a basic knowledge of physics necessary to develop an understanding of radiation used in the clinical setting, and to develop a knowledge base in factors that govern and influence the production and recording of radiographic images for patient simulation, treatment planning and treatment verification in radiation oncology. Fundamental physical units, measurements, types of radiation, fundamentals of X-ray generating equipment, X-ray production, radiation oncology imaging equipment and related devices are emphasized. Prerequisite: Admission to Radiation Therapy program or consent of instructor (3 lecture hours)

Radiation Biology and Protection

RATH 2311 - 4 Credits

Presents basic concepts and principles of radiation biology and radiation safety as they relate to radiation therapy. The interactions of radiation with cells, tissues and the body as a whole and resultant biophysical events are presented. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations are also incorporated. Prerequisite: Admission to Radiation Therapy program and Radiation Therapy 2301, 2310, 2321 and 2331 with a grade of C or better or equivalent or consent of instructor (4 lecture hours)

Quality Management in Radiation Therapy

RATH 2312 - 3 Credits

Focuses on the evolution of quality management (QM) programs and continuing quality improvements in radiation oncology. Topics include the need for quality assurance (QA) checks; QA of the clinical aspects and chart checks; film checks; the various types of evaluations and tests performed on simulators, megavoltage therapy equipment and therapy planning units; the role of radiation therapists in QM programs; legal and regulatory implications for maintaining appropriate QM guidelines as well as the role of computers and information systems within the radiation oncology department. Prerequisite: Admission to Radiation Therapy program and ARRT certification; Radiation Therapy 2302, 2311, 2322 and 2332 with a grade of C or better or equivalent (3 lecture hours)

Cross-Sectional Anatomy

RATH 2321 - 2 Credits

Basics of cross-sectional anatomy related to lesion localization in Radiation Therapy, normal sectional anatomy as shown in diagrams and radiographic, sonographic, computerized tomography (CT), nuclear medicine, and magnetic resonance (MR) images. Prerequisite: Admission to Radiation Therapy program or consent of instructor (2 lecture hours)

Pathophysiology for Radiation Therapy

RATH 2322 - 3 Credits

Introduces basic disease concepts, theories of disease causation, and system-by-system pathophysiologic disorders most frequently encountered in clinical practice. The processes involved in the development and classification of both benign and malignant tumors and site-specific information on malignant tumors are addressed. Prerequisite: Admission to Radiation Therapy program and Radiation Therapy 2301 and 2310 with a grade of C or better or equivalent

Radiation Therapy

or Radiation Therapy 2321 and 2331 with a grade of C or better or equivalent or consent of instructor (3 lecture hours)

Operational Issues in Radiation Therapy

RATH 2323 - 3 Credits

Focuses on various radiation therapy operational issues. Addresses concepts of team practice, patient-entered clinical practice and professional development. The interrelatedness of standards of care, law, ethical standards and competence will also be examined. Prerequisite: Admission to Radiation Therapy program and ARRT certification; Radiation Therapy 2302, 2311, 2322 and 2332 with a grade of C or better or equivalent (3 lecture hours)

Clinical Practice I

RATH 2331 - 3 Credits

Provides 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 are discussed, examined and evaluated. Prerequisite: Admission to Radiation Therapy program or consent of instructor

Clinical Practice II

RATH 2332 - 3 Credits

Expands the skills learned in RATH-2331. Through structured sequential assignments in clinical facilities, concepts of team practice, patient-centered clinical practice, and professional development shall be discussed, examined, and evaluated. Prerequisite: Radiation Therapy 2301 and 2331 with a grade of C or better or equivalent or consent of instructor

Clinical Practice III

RATH 2333 - 3 Credits

Advanced integration of skills learned in Radiation Therapy 2331 and 2332. Through structured sequential assignments in clinical facilities, concepts of team practice, patient-centered clinical practice and professional development shall be discussed, examined and evaluated. Prerequisite: Radiation Therapy 2302 and 2332 with a grade of C or better, or equivalent or consent of instructor

Principles of Proton Therapy

RATH 2351 - 8 Credits

Establishes factors that influence and govern clinical planning of patient treatment using proton beams. Encompassed are radiobiology of charged particles, particle accelerators, treatment delivery systems, quality assurance for proton therapy and clinical issues in proton radiotherapy. Optimal treatment planning with particle beams is emphasized. Prerequisite: Graduation from approved Radiation Therapy Program and consent of instructor. (8 lecture hours)

Proton Therapy Lab Practicum

RATH 2352 - 5 Credits

Establishes factors that influence and govern clinical planning of patient treatment using proton beams and a two week lab practicum at the ProCure Treatment Centers, Inc. training site in Bloomington, Indiana. Prerequisite: Consent of instructor is required. (4 lecture hours, 2 lab hours)

Clinical Experience in Proton Therapy

RATH 2353 - 3 Credits

Provides sequential development, application, analysis, integration, synthesis, and evaluation of concepts and theories in proton radiation therapy. Prerequisite: Consent of instructor is required.