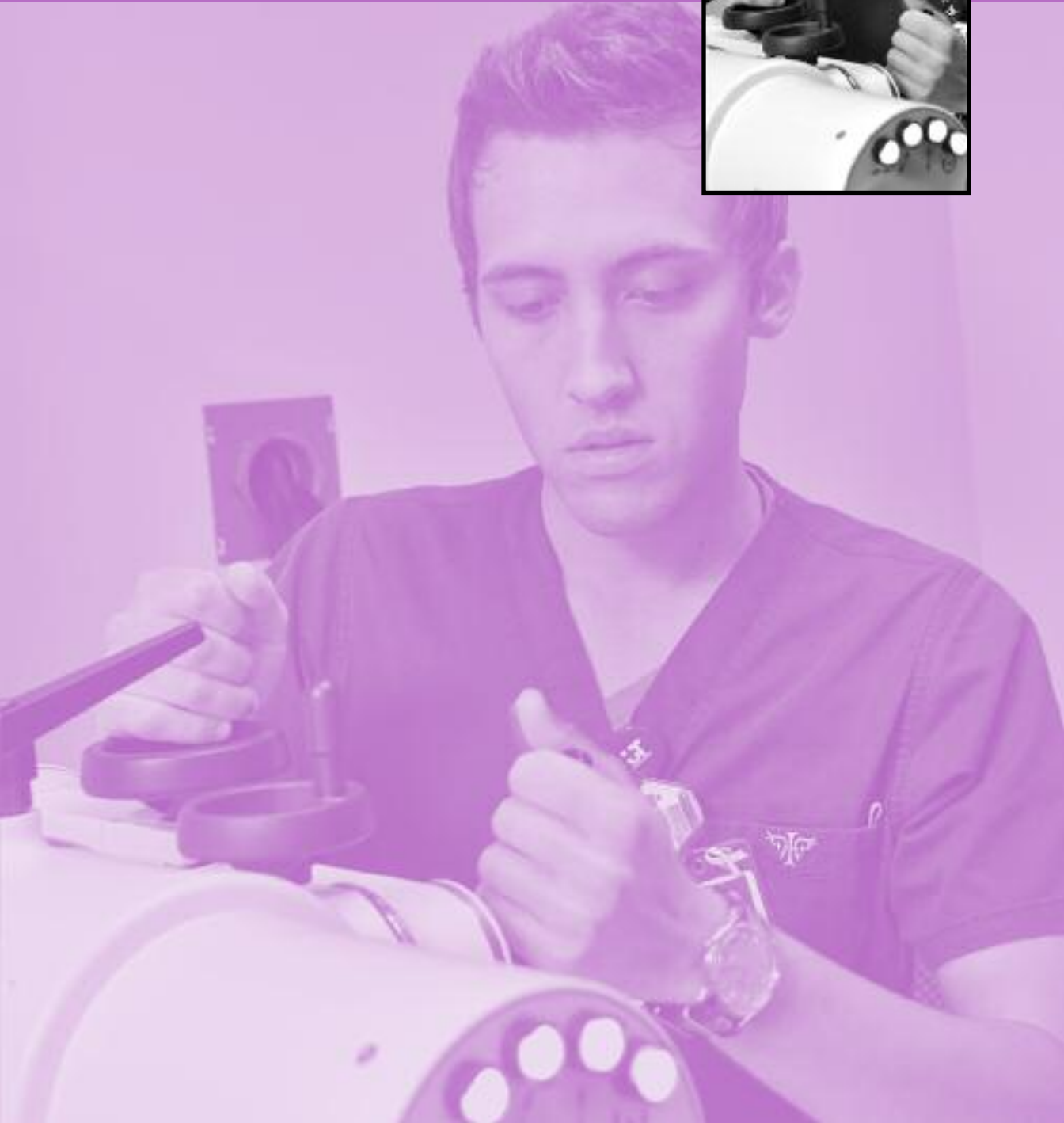


RADIATION THERAPY

• clinical nutrition • emergency medicine

education • health care sciences • physical therapy • physician

assistant studies • prosthetics-orthotics • rehabilitation counseling



RADIATION THERAPY

■ DEGREE OFFERED

Post-Baccalaureate Certificate

■ PROGRAM DIRECTOR

Marissa Johnson, M.S.R.S., R.T. (T)

FACULTY

Corry Defrates

Instructor and Clinical Coordinator
B.S.R.S, Southern Illinois University-Carbondale,
2000

Marissa Johnson

Assistant Professor
M.S.R.S., Midwestern State University, 2011;
B.S.R.T., R.T. (T) University of Oklahoma, 2002

Martha Schecter

Adjunct Instructor
J.D., University of Louisville School of Law, 1970;
L.L.M., Columbia University School of Law, 1974

Strahinja Stojadinovic

Assistant Professor
Ph.D., Kent State University, 2004

OBJECTIVES

The Radiation Therapy Program offers a didactic and clinical education to prepare the graduate for a career in radiation therapy. Students gain experience in all major areas of radiation therapy practice, including treatment delivery, medical dosimetry, simulation, and patient care. Students must already hold a bachelor's degree to pursue a post-baccalaureate certificate.

The curriculum is designed to support a competency-based clinical education to prepare the graduate to perform as an entry-level radiation therapist. The first-year courses



Marissa Johnson, M.S.R.S., R.T. (T)
Program Director

introduce the student to the health care industry, patient care, oncologic pathology, radiobiology, medical physics, and dosimetry. The second-year courses integrate these ideas into more advanced concepts concerning treatment planning, treatment delivery, and simulation.

The clinical aspect of the program combines the didactic material with simulated and actual patient care and treatment. Clinical experience rotations are provided at the Moncrief Radiation Oncology Center, located on the North Campus of UT Southwestern, and Simmons Radiation Oncology on the West Campus. At these locations, students can experience state-of-the-art cancer treatment under the supervision of faculty and staff. Students also rotate through the Annette Simmons Stereotactic Treatment Center at Zale Lipshy University Hospital. The clinical setting allows the student to achieve clinical competency and confidence in the treatment of patients with ionizing radiation. Graduates of the Program may apply to take the National Registry Exam in Radiation Therapy administered by the American Registry of Radiologic Technologists.

■ ACCREDITATION

The Radiation Therapy Program is accredited by the Joint Review Committee on Education in Radiologic Technology (20 N. Wacker Dr., Suite 2850; Chicago, IL 60606-3182; 312-704-5300).

REQUIREMENTS FOR ADMISSION

■ POST-BACCALAUREATE CERTIFICATE

The Admissions Committee for the Radiation Therapy Program determines the admissibility of an applicant in accordance with the quality of his or her credentials. The application process consists of submitting all application materials, completing 16 hours of clinical observations, and attending an interview with the Admissions Committee. Post-baccalaureate certificate students must meet all of UT Southwestern School of Health Professions general admission requirements listed in the Student Information chapter and satisfy the following:

- 1) Bachelor’s degree from a regionally accredited college or university;
- 2) Minimum cumulative grade-point average of 2.5 on a 4.0 scale;
- 3) Minimum cumulative GPA of 2.5 on a 4.0 scale in natural science and mathematics courses;
- 4) Radiation therapy prerequisite courses as specified on the chart on the following page; and
- 5) A grade of C or better on all prerequisite courses.

■ ESSENTIAL FUNCTIONS

In addition to essential functions for all students (see Entrance Requirements in the Student Information chapter), each student in the Radiation Therapy program must be able to:

- 1) Participate in supervised clinical activities, including walking and standing, for eight-hour days;
- 2) Demonstrate sufficient vision acuity to monitor patients, input data, read computer

monitors, and distinguish markings in dim lighting;

- 3) Demonstrate sufficient strength to lift, carry, and move items weighing up to 40 pounds;
- 4) Distinguish and interpret audio signals from equipment; and
- 5) Demonstrate sufficient upper- and lower-body strength to move, lift, and transport patients.

CURRICULUM

■ FIRST YEAR

FALL

COURSE	HOURS
RT 3301 Oncology Nursing and Patient Care	3
RT 3302 Introduction to Radiation Therapy	3
RT 3303 Medical Imaging and Processing	3
RT 3101 Medical Terminology	1
RT 3311 Legal and Ethical Issues in Radiation Therapy	3
HCS 5106 Professional Development	1
(1 hour awarded in spring semester)	

SPRING

RT 3211 Pathology	2
RT 3212 Sectional Anatomy	2
RT 3412 Radiation Biology	4
RT 3413 Radiation and Therapy Physics	4
RT 3304 Clinical Education I	3
HCS 5106 Professional Development	1
(1 hour awarded in spring semester)	

SUMMER

RT 3421 Principles and Practices of Radiation Therapy I	4
RT 3314 Medical Dosimetry I	3
RT 3405 Clinical Education II	4

■ SECOND YEAR

FALL

COURSE	HOURS
RT 4422 Principles and Practices of Radiation Therapy II	4
RT 4315 Medical Dosimetry II	3
RT 4301 Introduction to Research Methodology	3
RT 4406 Clinical Education III	4

SPRING

RT 4216	Quality Assurance and Operational Issues	2
RT 4302	Directed Research	3
RT 4323	Registry Review	3
RT 4407	Clinical Education IV	4

COURSE DESCRIPTIONS

See other departmental listings in this catalog for courses that do not begin with the prefix RT.

RT 3101 MEDICAL TERMINOLOGY
1 SEMESTER HOUR

This course introduces the entering health professions student to medical terminology through a self-instructional format. Explanations of Greek and Latin root words, prefixes, and suffixes serve as a basis for interpretation of terms common in medicine and health professions fields. Students are provided an opportunity to develop skills in defining, pronouncing, and spelling medical terms.

RT 3211 PATHOLOGY
2 SEMESTER HOURS

This course covers both general pathology and neoplasia. The general pathology section covers basic disease concepts and pathophysiology, while the second part discusses neoplastic transformation and neoplasia.

RT 3212 SECTIONAL ANATOMY
2 SEMESTER HOURS

Topographic, sectional, and radiographic anatomy are studied through the use of various diagnostic images, including plain films, nuclear medicine scans, sonograms, computer tomography, magnetic resonance images, and other imaging modalities.

RT 3301 ONCOLOGY NURSING AND
PATIENT CARE
3 SEMESTER HOURS

Content is designed to provide the student with foundation concepts and competencies in assessment and evaluation of the patient for both external beam and brachytherapy procedures. Psychological and physical needs and factors affecting treatment outcome are presented and

examined. Routine and emergency care procedures are discussed.

RT 3302 INTRODUCTION TO RADIATION
THERAPY
3 SEMESTER HOURS

The course offers 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. The history, roles, and responsibilities of the radiation therapist are presented. University and Program policies are discussed as well.

RT 3303 MEDICAL IMAGING AND PROCESSING
3 SEMESTER HOURS

This course is designed to establish a knowledge base in factors that govern and influence the production and recording of radiographic images. Both diagnostic and radiation therapy imaging equipment are discussed.

RT 3304 CLINICAL EDUCATION I
3 SEMESTER HOURS

Student begin to gain skill in clinical procedures as well as interactions with patients and professional personnel as they apply didactic knowledge to the clinical setting of radiation therapy and become familiar with each section of the radiation therapy department.

RT 3311 LEGAL AND ETHICAL ISSUES IN
RADIATION THERAPY
3 SEMESTER HOURS

Legal and ethical issues as they pertain to health care and the field of radiation therapy are discussed.

RT 3314 MEDICAL DOSIMETRY I
3 SEMESTER HOURS

This course covers the basic concepts in treatment planning, including treatment accessories and their relationship to dose distribution. Derivations and definitions of dosimetric terms and basic treatment calculations are presented. Treatment planning and computerized systems are introduced.

RT 3405 CLINICAL EDUCATION II
4 SEMESTER HOURS

Students gain additional skills through clinical

procedures and interactions with patients and professional personnel.

RT 3412 RADIATION BIOLOGY

4 SEMESTER HOURS

This course examines the effects of radiation on the cell, tissue, and whole body. The biological consequences of ionizing radiation on living tissue, as well as tolerance doses and fractionation schemes, also are discussed.

RT 3413 RADIATION AND THERAPY PHYSICS

4 SEMESTER HOURS

This course reviews basic concepts in radiation physics concerning atomic structure, production, and characteristics of ionizing radiation. The quality of ionizing radiation and measuring equipment also are presented. Linear accelerator design and radiation protection are discussed.

RT 3421 PRINCIPLES AND PRACTICES OF RADIATION THERAPY I

4 SEMESTER HOURS

This course examines the etiology, epidemiology, detection, diagnosis, and treatment rationale of a

multidisciplinary approach for the management of neoplastic disease. Specific topics address the radiation therapist's role in patient education, simulation, and treatment delivery.

RT 4216 QUALITY ASSURANCE AND OPERATIONAL ISSUES

2 SEMESTER HOURS

This course focuses on the evolution of quality management programs and continuing quality improvements in radiation oncology. Human resources, coding and billing, insurance, and departmental budgets are discussed as they apply to the radiation oncology department.

RT 4301 INTRODUCTION TO RESEARCH METHODOLOGY

3 SEMESTER HOURS

This course offers an introduction to statistical and epidemiological concepts with an emphasis on research strategies and an analysis of literature. A research topic is selected and a literature review completed. This course is the first in a two-semester sequence.



■ RADIATION THERAPY POST-BACCALAUREATE PREREQUISITE COURSES

COMPONENT AREAS	TEXAS COMMON COURSE NUMBERS	CREDIT HOURS
Communication		
English Composition	ENGL 1301, 1302, 2311, 2321, 2326 or equivalent	3
Speech	SPCH 1311 or equivalent	3
Mathematics*		
Pre-calculus	MATH 2412 or equivalent	3
Natural Sciences		
Chemistry*	CHEM 1405 or equivalent	4
Physics*	PHYS 1401, 1402 or equivalent	8
Anatomy and Physiology	BIOL 2401, 2402, or equivalent	8
Computer Science*		
Computer Science	COSC 1300, 1401 or equivalent	3

*Higher level courses may be substituted. For example, calculus can be substituted for pre-calculus.

**RT 4302 DIRECTED RESEARCH
3 SEMESTER HOURS**

This course is a continuation of HCS 4301. Students complete a research project started in the previous semester with data collection, analysis, paper, and presentation.

**RT 4315 MEDICAL DOSIMETRY II
3 SEMESTER HOURS**

This course continues the concepts presented in RT 3314 with intensity-modulated radiation therapy, brachytherapy, stereotactic techniques, and nontraditional fractionation schemes studies. New treatment modalities and their impact on dose distribution are presented.

**RT 4323 REGISTRY REVIEW
3 SEMESTER HOURS**

Students review all course material in preparation for the national board examination in radiation

therapy.

**RT 4406 CLINICAL EDUCATION III
4 SEMESTER HOURS**

This course is a continuation of RT 3304 and RT 3405. Students continue to improve their skills in clinical procedures by interacting with patients and professional personnel. Students gain clinical experience in dosimetry and medical physics.

**RT 4407 CLINICAL EDUCATION IV
4 SEMESTER HOURS**

This course continues the clinical education sequence. Students apply didactic knowledge to their clinical experience.

**RT 4422 PRINCIPLES AND PRACTICES OF RADIATION THERAPY II
4 SEMESTER HOURS**

This course is a continuation of RT 3421.