

RAD 510
Simulation and Cross Sectional Anatomy in Medical Dosimetry
Fall Semester Syllabus

COURSE DEFINITION:

RAD 510-2 Simulation and Cross Sectional Anatomy in Medical Dosimetry - This course covers the conventional and CT simulation techniques used in initiating radiation therapy for cancer patients. Identification of cross-sectional anatomy at different anatomical locations within the human body is also reviewed. This course is twenty weeks in length. Prerequisite: Admission to the Medical Dosimetry Program.

COURSE OBJECTIVES:

1. Demonstrate an understanding of Radiation Safety.
2. Demonstrate an understanding of CT simulation procedures.
2. Demonstrate an understanding of conventional simulation procedures.
3. Demonstrate an understanding of the cross sectional anatomy of the human body.
4. Demonstrate an understanding of the role of a medical dosimetrist.

COURSE OUTLINE:

Topics

1. Radiation Safety
2. CT simulation procedures
3. Conventional simulation procedures
4. Cranial cross sectional anatomy
4. Thorax cross sectional anatomy
5. Abdominal cross sectional anatomy
6. Pelvic cross sectional anatomy

COURSE REQUIREMENTS:

Purchase all texts, attend all lectures, and complete required examinations and quizzes. Participate in clinical internship. Purchase a T130XA scientific calculator.

PREREQUISITES: Admittance to the Medical Dosimetry Program.

TEXTBOOKS:

Required:

1. Khan, F. M. (2014). *The physics of radiation therapy* (5th ed.). Philadelphia: Wolters Kluwer
2. Khan, F.M. (2016). *Treatment planning in radiation oncology* (4th ed.). Philadelphia: Wolters Kluwer
3. Washington, C. M., & Leaver, D. T. (2015). *Principles and practices of radiation therapy* (4th Ed). St. Louis: Mosby.
4. Dean, D., & Herbener, T. (2000). *Cross sectional human anatomy*. Lippincott, Williams & Wilkins. (Any cross sectional anatomy book will be acceptable)

Optional: (Students typically use clinical sites' copy)

1. Bentel, G. C. (1992). *Radiation therapy planning* (2nd ed.). New York: McGraw-Hill.
2. Halperin, E. C., Perez, C. A., & Brady, L. W. (2008). *Principles and practice of*

- radiation oncology* (5th edition). Lippincott Williams & Wilkins.
3. Vann, A. M., et. al. (2013). *Portal design in radiation therapy* (3rd ed.). Augusta, Georgia: DMV Enterprises.
 4. Students should reference the nccn.org website for information. You will have to create a user name and login.

GRADING SCALE:

90-100	A
80-89	B
70-79	C
<70	Failing

Grades will be determined by:

Test Performance	70%
Quizzes/Homework/Presentations	30%

Note: An overall GPA of 3.0 or greater in all graduate coursework is required to successfully complete the Medical Dosimetry Program. This is a SIUC Graduate School Policy.