

**RAD 555**  
**The Physics of Medical Dosimetry III**  
**Summer Semester Syllabus**

**COURSE DEFINITION:**

**RAD 555-2 The Physics of Medical Dosimetry III** – This course covers the following topics: Monitor Unit (MU) calculations, point dose calculations and radiation biology. This course is ten weeks in length. Prerequisite: A grade of “C” or better in RAD 540.

**COURSE OBJECTIVES:**

1. Demonstrate an understanding of monitor unit calculations.
2. Demonstrate an understanding of point dose calculations.
3. Demonstrate an understanding of radiation biology.

**COURSE OUTLINE:**

**Topics**

1. Monitor unit calculations
2. Point dose calculations
3. Radiation Biology

**COURSE REQUIREMENTS:**

Purchase all texts, attend all lectures, and complete required examinations, quizzes, and homeworks. Purchase a T130XA scientific calculator.

**PREREQUISITES:** A grade of “C” or better in RAD 540.

**TEXTBOOKS:**

**Required:**

- Khan, F. M. (2020). *The physics of radiation therapy* (6<sup>th</sup> ed.). Philadelphia: Wolters Kluwer
- Khan, F.M. (2016). *Treatment planning in radiation oncology* (4<sup>th</sup> ed.). Philadelphia: Wolters Kluwer
- Washington, C. M., & Leaver, D. T. (2019). *Principles and practices of radiation therapy* (5th Ed). St. Louis: Mosby.

**Optional: (Students typically use clinical sites’ copy)**

- Bentel, G. C. (1992). *Radiation therapy planning* (2<sup>nd</sup> ed.). New York: McGraw-Hill
- Travis, E.L. (1989). Primer of Medical Radiobiology (2<sup>nd</sup> Ed.) St. Louis, MO: Mosby – Year Book, Inc.
- Vann, A. M., et. Al. (2013). *Portal design in radiation therapy* (3rd ed.). Augusta, Georgia: DMV Enterprises.

**GRADING SCALE:**

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

Grades will be determined by:

Test Performance	70%
Quizzes/Homework	30%

Late work will not be accepted. No credit will be awarded for work submitted after the deadline.

**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.**

**Note: A Final Comprehensive Exam will be given during this course and one must receive a passing grade ( $\geq 80\%$ ) to pass the course. If a score is less than an 80%, a grade of an F will be given. (This exam is comprehensive for the entire program year)**