

MASTER SYLLABUS

COURSE NUMBER AND TITLE:

RAD 400-3 Radiation Dosimetry and Instrumentation

COURSE DESCRIPTION:

Includes a study of the principles of radiation dosimetry and related calculations. Topics include calibration, protection, dose determination to points of interest, and basic treatment planning.

COURSE OBJECTIVES:

1. Demonstrate an understanding of the treatment prescription.
2. Demonstrate an understanding of the geometric parameters and patient measurements.
3. Demonstrate an understanding of the factors used in dose calculations.
4. Perform electron and photon dose calculations.
5. Demonstrate an understanding of basic treatment planning.
6. Demonstrate an understanding of heterogeneity calculations.
7. Demonstrate an understanding of special procedures within radiation oncology.

COURSE OUTLINE:

	PERCENTAGE:
1. Nomenclature.	5%
2. Dose calculation parameters.	20%
3. Practical calculation methods.	20%
4. Gap calculations.	5%
5. Irregular field calculations.	5%
6. Beam modifiers.	12.5%
7. Isodose distributions and factors that affect isodose distributions.	15%
8. Electron beam parameters and dosimetry.	12.5%
9. Special procedures	5%

MEANS OF STUDENT EVALUATION:

Grading Scale

93 - 100 =	A
85 - 92 =	B
77 - 84 =	C
70 - 76 =	D
0 - 69 =	F

PREREQUISITES: Instructor approval.

TEXTBOOKS:

1. McDermott, P. N. (2010). The Physics and Technology of Radiation Therapy (1st ed.). Madison, Wisconsin: Medical Physics Publishing.
2. Washington, C. M., & Leaver, D. T. (2010). Principles and Practices of Radiation Therapy (3rd ed.). St. Louis, MO: Mosby.