

Common Course Outline

RTTT 212

Dosimetry I

3 Credits

The Community College of Baltimore County

Description

RTTT 212 – 3 credits – Dosimetry I explores established factors that influence and govern clinical planning of radiation treatments. The course encompasses isodose descriptions, patient contouring, radiobiologic considerations, dosimetric calculations, compensation, and clinical application of treatment beams.

3 credits

Pre-requisites: RTTT 127; Admission to the Radiation Therapy Program; this course is only offered in the fall semester

Co-requisites: RTTT 202 and RTTT 206

Overall Course Objectives

Upon completion of this course the students will be able to:

1. compare photon isodose curves for clinically relevant photon beams;
2. describe the general influencing factors that distinguish various isodose curves;
3. determine internal and external patient factors that influence beam distribution, and apply isodose correction methods;
4. identify organs and tissues at risk;
5. compare fractionation schemes;
6. perform manual calculations for photon and electron treatments;
7. calculate absorbed dose to off axis points of interest;
8. calculate dose under a block;
9. evaluate and compare a variety of treatment plans for clinical use;
10. describe adjacent field techniques, multiple junction methods, and examine hot and cold regions associated with matching techniques;
11. evaluate possible corrections for treatment errors to correct for a misadministration of prescribed dose;
12. differentiate between treatment planning terms;
13. analyze dose volume histograms relative to treatment planning;
14. describe inhomogeneity factors; and
15. calculate percentage depth dose for electron beams.

Major Topics

- I. Photon Beams
- II. Electron Beams

- III. Manual Calculations
- IV. Isodose Curves
- V. Compensators
- VI. Shielding

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will include the following:

Students will take a midterm and a final exam
Students must pass their final exam with a 75% or higher
Students will complete weekly quizzes and assignments

Other Course Information

This course is a Radiation Therapy core course.
This course is part of a program sequence and offered in the fall only.

Date Revised: 02/25/12