

# Common Course Outline

RTTT 214

Dosimetry II

3 Credits

## The Community College of Baltimore County

### Description

Dosimetry II continues Dosimetry I. It emphasizes the theory and practice of optimal treatment planning. Clinical application includes calculations of treatment beams based on various current technology.

3 credits; 3 lecture hours; 0 laboratory hours.

Prerequisite: RTTT 212

### Overall Course Objectives

Upon successful completion of this course the student will be able to:

1. compare configurations of multileaf collimation systems;
2. discuss considerations to be taken when using multileaf collimators;
3. review the differences between static and dynamic multileaf collimation systems;
4. identify appropriate clinical applications for brachytherapy;
5. compare low dose rate (LDR) to high dose rate (HDR) brachytherapy;
6. describe the techniques and applicators used for intracavitary, interstitial and endovascular brachytherapy procedures;
7. explain how simulation and CT data is used for source localization;
8. discuss the objective of treatment planning for brachytherapy procedures;
9. summarize dose specification and prescription techniques for different types of implants;
10. compare historical implant calculation methods;
11. describe optimization techniques used in computer- aided dose calculations;
12. discuss procedural processes and record-keeping requirements for radioactive material;
13. state the radiation safety requirements for LDR and HDR procedures;
14. identify appropriate clinical applications for using IMRT; and
15. describe the general flow of the IMRT process from patient immobilization through treatment delivery.

### Major Topics

- I. Collimation
- II. Brachytherapy
- III. CT Stimulation
- IV. IMRT
- V. Computer -Aided Dosage Calculations

## **Course Requirements**

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

1. Class participation
2. A minimum of at least two exams

Writing: The individual faculty member will determine specific writing assignments.

Date Revised: 5/13/05