

Common Course Outline
RTTT 125
Radiation Therapy Physics I
3 Credits

The Community College of Baltimore County

Description

RTTT 125 – 3 Credits – Radiation Therapy Physics I reviews fundamental physics knowledge with an introduction to radiation therapy physics. This course covers physical units, measurements, basic principles, atomic structure, types of radiation, x-ray production, and radiation interactions.

3 credits

Pre-requisites: RTTT 101; Admission to the Radiation Therapy Program; this course is only offered in the fall semester

Co-requisites: RTTT 103, RTTT 105 and RTTT 111

Overall Course Objectives

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

1. define the fundamental units of the English, metric and System International Units (SI);
2. compare the characteristics and functions of a proton, neutron and electron;
3. describe the process of excitation and ionization;
4. explain the relationship between wavelength, frequency and velocity;
5. discuss the interaction between electrical charge and electrical field;
6. compare types and functions of generators, motors, transformers and rectification systems;
7. identify the components of the x-ray tube;
8. state the principles of x-ray production;
9. compare the production of *Bremsstrahlung* with the production of characteristic radiations;
10. compare various photon interactions; and
11. define units of radiation measurement.

Major Topics

- I. Units of Measurement
- II. Structure of the Atom
- III. Structure of Matter
- IV. Nature of Radiation
- V. Electromagnetism
- VI. Diagnostic X-Ray Tubes

VII. X-Ray Circuits

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