

RDTH 220C : Radiation Therapy Physics

Reviews and expands concepts and theories in the radiation physics course. Detailed analysis of the structure of matter, properties of radiation, nuclear transformations, x-ray production, and interactions of ionizing radiation are emphasized. Also presented are treatment units used in external radiation therapy, measurement and quality of ionizing radiation produced, absorbed dose measurement, dose distribution, and scatter analysis.

Credits 3

Lab/Practicum/Clinical Hours 0

Lecture Hours 3

Prerequisite Courses

RADT 180C

RDTH 150C

Co-Requisite Courses

RDTH 293C

Learning Outcomes

- Describe atomic structure and composition among the elements, including but not limited to particles (their location, energy level and charge), atomic number and mass.
- Explain nuclear stability and types of radioactive decay.
- Describe x-ray production for linear accelerators including the factors that influence production and output.
- Compare the characteristics of betatron, cyclotron, microtron, and other accelerated particles.
- Explain charged particle interactions with matter, describing dose deposition, energy loss, and shielding requirements.