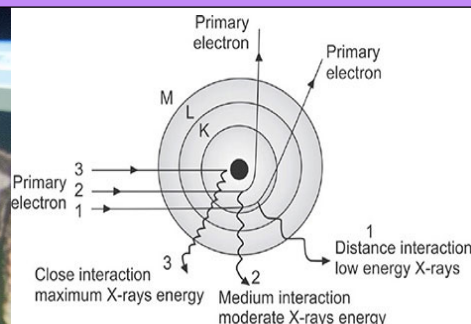


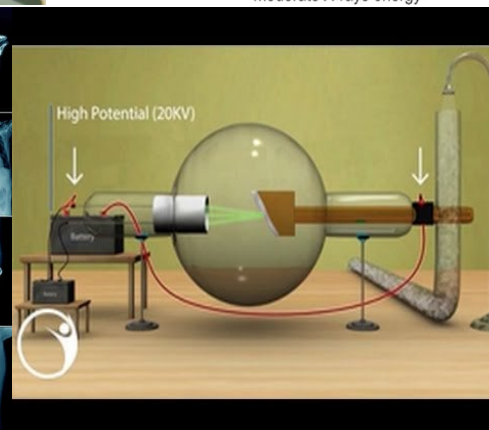
A New Class at UC Merced – Fall 2025 M/W 3-4:15

Pre Requisites: Physics 9 or 19



The Physics of Radiology

Physics 153 Fall 2025 M/W 3-4:15



Explore the wonders of atomic physics and how the discovery of X-rays, a form of electromagnetic radiation, revolutionized the diagnosis and treatment of disease. This discovery provided the basis for unprecedented advances in medicine by creating the means for noninvasive examination of the structures of the human body previously unseen without the use of surgery.

Beyond medicine, X-ray and other imaging applications are plentiful in industry, contributing to our understanding of molecular structure, and playing an important role in our understanding of the nature of matter.

The course explores the interaction of radiation with matter at the atomic level and provides the student with a quantitative understanding of how this phenomenon contributed to modern day medical imaging techniques, including CT and PET Scanning as well as MRI approaches. It also offers opportunities to review the historical development of the discovery of X-rays, including the contributions of William Conrad Roentgen, awarded the first Nobel prize in physics for the discovery of the X-ray, Marie Curie the only person to be awarded the Nobel prize in 2 disciplines, chemistry and physics, for her work with radioactive substances and for her discovery of Polonium and Radium, and others whose contributions lay the groundwork for the most influential medical-technological advancement of modern day medicine.