

Common Course Outline

PHYS 141

RADIOLOGIC PHYSICS

4 Semester Hours

Description

Radiologic Physics

Presents the physics and chemistry which apply to the practice of radiology; covers radiation, ionizing radiation, physics of radiologic instruments, x-ray circuitry, fundamentals of radioisotopes. Primarily for students in Radiologic Technology and Radiation Therapy programs.

Prerequisite: Phys 101.

Overall Course Objectives

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

- 1. Understand the basic concepts radiation science.**
- 2. Analyze the properties of the atom.**
- 3. Analyze the properties of electromagnetic radiation.**
- 4. Understand the basic concepts of electricity.**
- 5. Understand the basic concepts of magnetism.**
- 6. Understand the basic concepts of electromagnetism.**
- 7. Understand the basic concepts of the X-ray unit.**
- 8. Understand the basic concepts of the X-ray tube.**
- 9. Understand the basic concepts of X-ray production.**
- 10. Understand the basic concepts of X-ray emission.**
- 11. Analyze the ways in which X-rays can interact with matter.**
- 12. Write a formal lab report.**

Major Topics

- I Matter and Energy**
- II Units of Ionizing radiation**
- III Atomic Structure and Nomenclature**
- IV Radioactivity**
- V Photons**
- VI Electrostatics/Electrodynamics**
- VII Magnetism**
- VIII Electromagnetism**
- IX X-ray unit**
- X X-ray tube**
- XI X-ray emission spectrum**
- XII Compton scattering/Photoelectric absorption**

Course Requirements

Grading/Exams: Grading procedures will be determined by the individual faculty member teaching the course but will include the following: Exams (which includes a final), Quizzes, Lab writeups.

Writing

Specific writing assignments will be determined by the faculty member teaching the course.

Other Course Information

1. Individual faculty members may include additional course objectives/topics.