



GP-101

Principles of Radiation Detection – E-Learning

DESCRIPTION

This training course provides an introduction to the fundamental principles and methods of radiation detection. Covered topics include radioactive decay, types of radiation detectors, and an overview of measurement applications involving gamma spectroscopy, alpha spectroscopy, and alpha/beta counting. This course is presented as a self-directed “E-Learning” experience that allows coverage of the training materials at whatever time and pace is best for each student. This E-Learning course is intended to serve as the first milestone within Mirion’s “Training Trax” program, developed to allow students to advance to higher levels of expertise in a variety of specialized software and measurement applications. Students will be required to pass a final exam to confirm and receive credit for successful completion of this course.

HOW YOU WILL BENEFIT

Students who complete this course will gain a thorough understanding of all of the fundamental processes which contribute to the detection and analysis of radioactive materials. This knowledge will allow the student to understand the basic operation of various radiation detection systems. Managers and supervisors benefit from the assurance that the technologist has a thorough working understanding of the fundamental principles that guide successful radiation detection activities.

WHO SHOULD ATTEND

New technologists or supervisory personnel who need to gain a general understanding of ionizing radiation, radioactive decay, radiation detection methods, and practical radiation measurement applications. This course is also suitable for experienced technologists desiring a fundamentals refresher.

COURSE CONTENT

- ✓ Basic Radiation Physics
- ✓ Radiation Interaction with Matter
- ✓ Types of Radioactive Material and Dose
- ✓ Radioactive Decay Data
- ✓ Gas-filled Detectors
- ✓ Scintillation Detectors
- ✓ Semiconductor Detectors
- ✓ Typical Features in Gamma Spectra
- ✓ Introduction to Gamma Spectroscopy
- ✓ Introduction to Alpha Spectroscopy
- ✓ Introduction to Alpha/Beta Activity Measurements

PREREQUISITES

There are no specific prerequisites for this E-Learning course, though students will derive more benefit from this course if they have a basic understanding of atomic structure, types of radiation, and their own facility operations involving radioactivity measurements.