Course Outline

Nuclear Physics Review
- Nuclear vs. Electrical Forces
- Radioactivity & Radiation

Fundamentals of Radiation Detection
- Ions
- Direct vs Indirect Ionization
- Interaction of Photons with Matter
- Linear Energy Transfer

Principles of Radiation Detectors
- Gas Filled Detectors
- Scintillation Detectors
- Semiconductor Detectors
- Personal Dosimetry

Standards for Detector Calibration
- NCRP 112 & ANSI 323

Sample Analysis and Counting Statistics
- Error & Uncertainty
- Determining Detector Efficiency
- Accuracy vs Precision

Gamma Survey Meter Calibrations
- Sources & Methods Used
- Inverse Squared Law

Beta Survey Meter Calibrations
- Sources & Methods Used
- Extrapolation Chambers
- Beta Correction Factors

Neutron Survey Meter Calibrations
- Challenges in Performing Measurements
- Sources & Methods Used
- TEPCs in Neutron Detection

Contamination Monitoring Instrument Calibrations
- General Considerations
- 2 Pi vs 4 Pi Source Geometries
- MDA Calculations

Calibration Quality Control
- Components of a QC Program
- Designing a QC Chart

Calibration Facility Operation and Maintenance
- Design Considerations
- ALARA
- Use of Positioning Devices

Instrument Use and Control
- Calibration
- Performance Checks
- Efficiencies

New Instrument Selection and Evaluations
- General Considerations
- Key Instrument Properties
- Evaluation Criteria

OPERATION & CALIBRATION OF INSTRUMENTS

training course

Seabrook, New Hampshire
October 11th - 13th, 2021

Radiation Safety & Control Services, Inc.
93 Ledge Road, Seabrook NH 03984
Tel: 800-525-8339 · Fax: 603-474-1531
www.radsafety.com

Course Description

This 3-day course covers the principles for operating and calibrating hand-held detectors and different stationary detectors such as area monitors, tool monitors, and personnel contamination monitors. The class will cover gamma, beta, and neutron dose rate instrumentation operation and calibrations as well as alpha, beta, and gamma contamination monitor operation and calibrations. The class will provide a balance of classroom lecture as well as hands-on practical sessions using actual radiation detection instrumentation and RSCS Training simulators
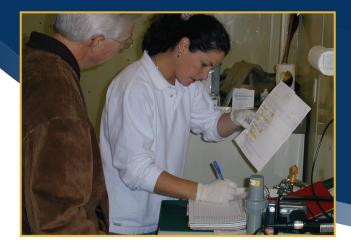
The instructors of the course are Certified Health Physicists and instrumentation technicians with extensive experience in their field. At RSCS, they operate a nuclear instrumentation calibration facility, an analytical measurement laboratory, and also perform consulting for Radioactive Material Licensees. The American Academy of Health Physics (AAHP) has granted 40 CECs for this course.

Class Schedule

Classes will run **October 11th through October 13th, 8:00 AM to 5:00 PM on Monday-Wednesday.** Complimentary continental breakfast, a catered lunch and snack breaks will be provided daily. On Monday evening we will hold a cocktail social immediately following the class.

Registration and Accommodations

The fee for the course is $1,095.00. Since enrollment is limited, early registration is advised. An early bird discount of $100 will apply to all students who register and provide payment or purchase order for the course by September 10th. A full refund less a $150 administrative fee will be provided for course cancellations made in writing to the RSCS Training Course Administrator on or before the first day of class. For cancellations made within 3 days of registration, this $150 administrative fee will be waived, and a full refund will be provided. To register, contact RSCS at 800-525-8339 x220.

Courses will be held at the RSCS Corporate Training Facility in Seabrook NH. Seabrook is a seaside New England town that offers proximity to several beautiful beaches, including the Hampton Beach resort area. Seabrook is also in close proximity to the charming and hsitoric seaport towns of Portsmouth, NH and Newburyport, MA. The course will occur in the middle of the gorgeous New England fall folliage season.

Course participants are responsible for their hotel accommodations. A block of rooms at the Holiday Inn in Seabrook NH, has been held at a reduced rate of $130 plus tax per night.

Call the Holiday Inn direct at 603-474-1150. Alternately, a block of rooms at the Fairfield Inn in neighboring Amesbury MA has been held at $85 plus tax per night. Contact the Fairfield Inn direct at 978-388-3400. For either hotel, please be sure to let the front desk know you are attending the RSCS course.

More Information

To register for the course online, or to contact us for additional information, visit us at radsafety.com or call us at 800-525-8339 x220.

About Us

Established in 1989, Radiation Safety & Control Services provides technical consulting, training and instrument support services to commercial nuclear, private industrial, medical, academic and governmental facilities. Services offered include:

Health Physics Consulting
- Management & Technical Staffing
- License Applications & Amendments
- Program Development & Assessment
- Environmental & Geotechnical Support
- Decommissioning Support
- Modeling & Characterization
- Specialty Surveys

Health Physics Software
- Radiation Safety Manager
- Decommissioning Cost Estimation
- Analytical Data Management System

Calibration & Analytical Lab
- NIST-Traceable Instrument Calibration for gamma, beta & neutron detection instruments
- Full Service Repair Lab On Site
- Radioactive Source Leak Testing
- Radon Testing
- Tritium Testing

Radiation Detection Equipment Sales
- Radiation Detection Equipment Sales & Leasing
- Simulated Radiation Detection Equipment
- Radiation Safety Supplies