

MOBILE TRAINING COURSE CATALOG

Listed below are examples of courses offered by NSRI. All courses can either be taught at the NSRI National Capital Region (NCR) Laboratory and Conference Center, a state-of-the-art facility in Savage, Md., or offsite via NSRI's Mobile Training Team (MTT). In addition to our listed courses, NSRI offers tailored courses to suit individual client needs. Often times, custom courses are delivered based on unique client capabilities, mission requirements or parameters. NSRI instructors are seasoned subject matter experts in their respected field and come to NSRI from intuitions such as Dugway Proving Grounds Special Programs, Special Operations Command, John Hopkins Applied Physics Lab, United States Army Medical Research Institute of Infectious Diseases, Federal Law Enforcement, Department of Energy, Civil Support, Emergency Response Community and the intelligence community — just to name a few. All of our cadre bring years of knowledge and first-hand experience to the customer.

BIOLOGICAL COURSES

BIOLOGICAL PRODUCTION SIGNATURES

(16 Hrs.)

The objective of this course is to familiarize the students with biological weapons characteristics, design and production processes to provide an awareness of various growth methods and hazards associated with the agents. This course of instruction combines lecture and demonstration starting with a general overview and history of biological weapons and their use. The students will be informed of the rationale and design of biological agents for use as weapons. Basic principles of growth and associated equipment is presented for various types of biological materials (bacteria, virus and toxins). The course also includes hands on demonstrations of biological processes emphasizing potential hazards and sampling opportunities.

SMALL SCALE BIOLOGICAL PRODUCTION

(32 Hrs.) Home Depot Course

This course of instruction combines lecture with hands-on design and build of biological processes. The objective is to have the students understand the production of biological agents by demonstration and growth of biological material. The course of instruction focuses on non-state sponsored productions processes and use of easily acquired material for production of biological agents. The initial instruction will provide a general overview of agents, growth characteristics and requirements for production. The students will then be given the opportunity to design and build production processes using commercially available material. The course concludes with analysis of the processes and quality of the product generated.

CHEMICAL COURSES

CHEMICAL WARFARE

(Course length is tailored to customer requirements)

The Chemical Signatures Course is an introduction to chemical weapons and warfare agents. The topic is treated from a historical, developmental and likely use perspective. The toxic properties, exposure symptoms, countermeasures and basic synthetic methods for the major classes of chemical agents is reviewed. This course also delves into the development of these weapons and both past and possible use scenarios. The course is readily customized for the first responder, support team member or the warfighter. It provides a "what to look for" in common chemical weapons synthetic efforts. It serves as the basis for the Improvised and Clandestine Laboratory Course as well as other sampling and analysis courses offered by NSRI. The class can be offered at the Secret or Unclassified level.

PHARMACEUTICAL BASED AGENTS (PBA)

(16 Hrs)

This is a blended two-day course that combines practical hands-on learning with classroom instruction. Students will become familiar with the hazards and threats associated with synthetic opioids. This course is designed to improve the safety and effectiveness of anyone who responds to an incident at a PBA laboratory. Participants will be provided with risk-based response guidelines on selecting personal protective equipment, decontamination equipment and be able to recognize incident indicators.

Students will receive hands-on instruction on different fentanyl synthesis pathways, production and current trends and sophistication of synthetic opioid clandestine lab operations. All participants will have the opportunity to test current detection and identification methods utilizing their equipment. The course concludes with a practical decontamination demonstration where students will examine the effectiveness of various decontamination methods using a visual stimulant.

CHEMICAL SIGNATURE AND RECOGNITION

(32 Hrs)

A hardware store inspired laboratory is limited only by the creativity of the designer. As such, no two makeshift laboratories will look identical. It is critical for the Chemical, Biological, Radiological and Nuclear (CBRN) response teams to understand the fundamentals of chemistry laboratory techniques to analyze the setup, assess the safety and determine the chemical processes occurring upon entering a makeshift laboratory.

NSRI's Chemical Warfare Agent production course is a four-day course that combines practical, hands-on learning training stations with classroom instruction. Participants will become familiar with basic chemistry laboratory techniques, equipment, material compatibilities and commercial chemical availability. This course is designed to increase the safety and awareness of the CBRN response teams upon entering a clandestine or makeshift laboratory.

Participants will receive classroom and hands-on instruction of eight basic chemistry lab techniques using standard chemistry glassware setups to generate, separate, isolate and purify mixtures of chemicals. Participants will leverage this knowledge to design and construct equipment setups from hardware store components that mimic the capabilities of standard glassware setups. The participants will then test and evaluate these hardware store setups in the generation, separation, isolation and purification of benign chemicals. Finally, a laboratory practical will test the students and their hardware store setups using commercially available chemicals to generate CWA simulants and precursor chemicals.

EXPLOSIVE COURSES

HOME MADE EXPLOSIVES AWARENESS

(8 Hrs.)

The intent of this course is to fill the gap in knowledge that exists between trained EOD Operators/Bomb Technicians and first responders. An awareness of homemade explosives (HME) IED's is critical for first responders, as they are often the first ones to encounter the threat of such substances and devices.

The course is designed to promote awareness in order to enable early recognition and an appropriate response by the discoverer of HME mixtures, precursor chemicals, IED's or IED components. As a part of the course, participants will handle inert HME mixture samples. Additionally, Mock IED's with a variety of switches will be demonstrated in order to enhance the hands-on learning of participants. Finally, participants will be introduced to a mock HME lab to give them an Idea of what equipment might be found on site.

INTERMEDIATE HOME-MADE EXPLOSIVES PRODUCTION

(24 Hrs.)

This is a 3-day Intermediate Improvised Explosives course. The course combines 8 hours of classroom instruction with 16 hours of hands-on learning. Course is designed to improve the safety and effectiveness of CST members, EOD Technicians, Special Operations Forces, Law Enforcement Personnel and Intelligence Analysts by giving them a greater awareness of improvised explosive (HME) manufacture. Course objectives include recognition of HME operations, understanding the hazards of precursor chemicals and improvised explosives, crude field identification methods, desensitization techniques, and comparison of HME sensitivity and performance to standard explosives.

ADVANCED HOME-MADE EXPLOSIVES PRODUCTION

(40 Hrs.)

This course is an advanced, high-paced, hands on, class. It combines 8 hours of classroom instruction with 32 hours of hands-on learning. Course is designed to improve the safety and effectiveness of CST members, EOD Technicians, Special Operators and Intelligence Analysts by giving them a greater awareness of improvised explosive (HME) manufacture. Course objectives include recognition of HME operations and precursors, understanding the hazards of precursor chemicals and improvised explosives, field identification methods, and comparison of HME sensitivity and performance relative to standard military and commercial explosives.

IMPROVISED EXPLOSIVE DEVICE AWARENES

(8 Hrs.)

This course provides the knowledge and skills for First Responders to not only identify potential explosive threats but identify the key components critical for determining response procedures. This course provides a comprehensive overview of Improvised Explosive Devices (IED) for Civil Support Team Members (MIL), law enforcement (LE), fire, to assist in the execution of their duties. It covers a brief history of the use of IEDS and their evolution as a terrorist attack weapon and, methods. Participants will be provided with explosives familiarization, to include recognition of commercial, military and homemade explosives, as well as their function and uses. The class will further provide IED familiarization, to include information on the composition of an IED and the various sources of information available for the construction of IEDS. Additionally, participants will gain information on bomb threats and search procedures to include evaluating the credibility of a bomb threat, recommendations on the development of a search team and proper search procedures.

Attendees will participate in classroom lecture and practical labs to understand how IEDS function. Students will be exposed to practical exercises, focusing on the identification of an array of IEDS, their components and triggering mechanisms. The course will guide emergency personnel through the attack cycle in relation to the IED manufacturing process while identifying points of observable activity that can be communicated to emergency responders.

LABORATORY/ ANALYTICAL COURSES

XBRT - ADVANCED BIOSURVEILLANCE LEADERSHIP

(2 Wks.)

The XBRT-ABLC is an intensive-Analytical Operations-focused course designed to ensure the next generation of analytical leaders stay relevant and continue to provide the best assistance and advice. The course will challenge students to demonstrate expertise in biosurveillance techniques, concepts and adaptive thinking while working to solve current and/or historical analytical operations problems faced by the CST community. In order to remain relevant, students will learn from the stories, programs and projects that comprise the biosurveillance community including engagement with Public Health, Deployed Field Diagnostics Mission Partners, CWMD Agencies and National Laboratories/Institutes. Students may receive classified briefings on assay specific Students will demonstrate understanding of CLIP/CLIA and ISO, programs ensuring a literacy in the concept of quality and legal requirements of clinical and environmental biosurveillance. Students will develop or select models, theories and hypothesis to test current biosurveillance operations, protocols or procedures with the goal of creating refined, specific and relevant solutions or documenting findings. Students will be performing experiments to test hypotheses or models based on current biosurveillance TTPs. Students will be expected to learn and adapt new technologies and instruments into operational models of biosurveillance in order to guide validation and implementation of these maturing technologies. Students will be expected to present their projects and demonstrate utility and relevance for University of Nebraska graduate credit.

The course would occur at the NSRI National Capital Region (NCR) Laboratory and Conference Center in Savage, Md. Each student will be responsible for their own laboratory instruments, equipment, data and success.

XBRT - ANALYTICAL EXERCISE

(2-3 Days)

The XBRT Analytical Exercise is a dynamic exercise to stress and hone the operational capability of fully-trained analytical laboratory operators through 36 or up to 72 hours of continuous analytical operation. In a multi-laboratory/team environment, the exercise will challenge the operational awareness and objective-oriented focus of laboratory operators while they process challenging samples and integrate intelligence and information from multiple incidents. The dynamic time-sensitive scenario will require operators to leverage training, experience, and knowledge to provide the most accurate and relevant information in-time to make a difference.

- ◆ Triage samples by sample type, origin, and probability of most hazardous
- ◆ Prioritize how samples will be processed as a single lab or as multiple labs
- ◆ Apply scientific expertise and references to complete RFIs
- ◆ Maintain quality standards of record management
- ◆ Identify or characterize radiation and FTIR spectra received electronically
- ◆ Identify or characterize the hazard from chemical and biological samples
- ◆ Track sample progress among shifts, participants, and participating laboratories
- ◆ Exercise or establish protocols and procedures with local Public Health and agency laboratories
- ◆ Provide the most accurate answers and recommendations in a timely manner



OPERATIONAL COURSES

TRAVEL SECURITY AND OPERATIONAL AWARENESS

(32 Hrs.)

Millions of people travel every year on business, education or for pleasure, often to countries that have a high risk of crime and terrorism. The National Strategic Research Institute has developed a basic safety travelers' program to aid individuals or groups traveling abroad to remain safe.

NSRI collaborates with University of Nebraska to promote guidance on travel security awareness and training. This is a three-phase course that combines scenario-based training evolutions and culminate with a capstone field training event.

The course is broken down into modules that follow your journey from start to finish and focuses on best practices to enable you to have a safe and secure trip. Each module will guide you through practical, effective steps for remaining safe, so that by the end of the course you will have an awareness of how potentially unsafe situations arise and a suite of planned responses to such situations, should they occur.

TACTICAL RESPONSE TO WMD FOR LAW-ENFORCEMENT

(40 Hrs.)

The Tactical Response to Weapons of Mass Destruction Incidents has been created for first responder's tactical teams, supervisors and administrators. The 40-hour, 5-day course gives the law enforcement or tactical response team the training on equipment and tactics needed to safely respond to and operate in an environment involving the terrorist use of a weapons of mass destruction (chemical, biological, radiological or nuclear weapon).

The course covers a general awareness of chemical, biological and radiological and explosive hazards, improvised and clandestine laboratories, force protection options, concept of operations in a WMD environment, the appropriate technique of donning and doffing and operating in various levels of personal protective equipment, identifying the differences between chemical, biological and radiological/nuclear hazards, understanding their areas of operation and terrorism response capabilities. One of the main objectives of this course is to utilize or develop each teams Standard Operating Procedures (SOP's). Additional topics covered will be self, hasty and emergency decontamination, first aid in a hazardous environment, tactical considerations and officer safety issues in dealing with a small or large scale WMD event.

This is an intense course of practical application and scenario-based training. At the conclusion of the course students will be able to recognize WMD threats, choose the protective equipment for their mission profile and safely execute their mission objectives in a hazardous environment, provide emergency decontamination, mitigation and stabilization of the incident. The culminating event for this course is a full-scale exercise designed to reinforce lessons learned throughout the week. Strong emphasis on interactive and practical exercises. Simulations are an important part of the course. We ensure a challenging but safe learning environment.

BIOLOGICAL THREAT RESPONSE AND SAMPLING

(8 Hrs)

This course consists of lecture and skill-building by utilizing hands-on collection problems. It addresses crucial and specific skills and techniques associated with responding to a suspected biological threat and sample collection. Students will become familiar with The National Strategy for CBRNE Standards, the Framework for a Biothreat Field Response Mission Capability and FBI-DHS-HHS/CDC coordinated document guidance on initial responses to a suspicious letter/container with a potential biological threat. Students will perform field screening, site characterization and become proficient in public safety sampling techniques required in the response to a suspected biological threat.

The course focuses on the role of the first responder and the process of collecting forensically valid samples, through laboratory analysis; utilizing the ASTM E-2770-

10 Standard Guide for Operational Guidelines for Initial Response to a Suspected Biothreat Agent and, ASTM E-2458 Bulk Sample Collection and Swab Sample Collection of Visible Powders Suspected of Being Biothreat Agents from Nonporous Surfaces Overview. This process is consistent with the FBI 12-step process for managing a crime scene, including those involving a WMD. Additionally, students will be introduced to the CDC surface sampling procedures for Bacillus anthracis spores. Students will become familiar with the hazard and threat assessment process as well as the FBI Threat Credibility and Evaluation (TCE) call that takes place on scene and the role of the FBI's Weapons of Mass Destruction Coordinator (WMDC) during the incident. At the end of the course students will be evaluated with a written test and hands on demonstration of sample collection techniques.



WORK WITH NSRI FIELD OPERATIONS & TRAINING

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