

	<b>Northeastern Illinois Public Safety Training Academy</b> <b>Course Syllabus</b>	<b>301</b>
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<b>Title:</b> Hazardous Materials Operations	<b>Program Duration:</b> 40 Hours
<b>Type:</b> Campus Training Program (CTP)	<b>Coordinator:</b> M. Neimark

### Course Description

NIPSTA's Hazardous Materials First Responder - Operations program is designed to exceed the requirements outlined by the Illinois Office of the State Fire Marshal "OSFM", and provides students with the basic knowledge and skills needed to respond to hazardous materials/weapons of mass destruction "WMD" incidents for the purpose of implementing or supporting actions to protect nearby persons, the environment, or property from the effects of a hazardous material release.

### Prerequisites

The purpose of pre-requisite course work is to ensure students have sufficient backgrounds to understand the terminology, tactics and practical applications presented in NIPSTA programs. At a minimum, NIPSTA requires successful completion of the following:

- Member of a recognized fire department or brigade
- Basic Operations Firefighter
- Hazardous Materials Awareness

### Attendance

In order to receive a certificate of completion for courses, NIPSTA requires students to be present for all lectures, demonstrations and evolutions.

### Safety

NIPSTA Instructors will ensure hazards have been identified and addressed prior to the start of each program. All course safety guidelines are discussed prior to operations. Unsafe actions or behaviors will not be tolerated and will be grounds for dismissal.

### Academic Integrity

NIPSTA aspires to the highest possible standards of academic honesty and integrity in all programs as key tenants of the NIPSTA experience. NIPSTA Instructors set forth clear ethical expectations, promote consistency of standards, and encourage reporting of dishonest and unsafe behaviors. While education through participation is the central goal for every NIPSTA program, it is only possible when honesty and integrity are part of the overall mission.

### Performance Testing & Evaluation

NIPSTA employs multiple methods of measuring competency subject matter, including cognitive and performance skill testing. Cognitive skills will be measured by utilizing a comprehensive written exam at the conclusion of the course. Students must achieve a minimum 70% score to successfully pass the written exam. Performance skill tests measure an individual's ability to perform specific tasks or applications based on given or known JPRs. Unless otherwise specified, performance skill tests will be measured on a pass or fail basis.

## **ADA Compliance**

Students with a documented disabilities, as that term is used in the American with Disabilities Act (ADA), may qualify for reasonable accomidations as defined in section 504 of the Rehabilitation Act of 1973.

## **Textbook**

The following textbooks are required for NIPSTA's Basic Hazardous Materials Operations course.

- Title: Emergency Response Guide, 2024 Edition, Department of Transportation
- Title: Hazardous Awareness and Operations, 4<sup>th</sup> Edition, Jones & Bartlett
  - ISBN: 9781284264074

## **Pre-course Assignments**

The purpose of pre-course assignments is to ensure candidates are prepared to succeed at the onset of the program. The pre-course assignments for NIPSTA's Hazardous Materials Operations course are as follows:

- Review:** Emergency Response Guide (ERG), 2024 Edition, Department of Transportation
- Read:** Hazardous Awareness and Operations, 4<sup>th</sup> Edition, Jones & Bartlett
  - Chapters 1 and 2

## **40 Hour Course Content**

Course content is grouped into subject area modules or “Mods”. The following Mods are covered in NIPSTA's Hazardous Materials Operations course:

**Mod:** Orientation & Course Information  
**Mod:** Regulations, Standards, & Laws  
**Mod:** Recognizing & Identifying Hazards  
**Mod:** Material Properties & Effects  
**Mod:** Understanding the Hazards  
**Mod:** Estimating Potential Harm  
**Mod:** CBRN/WMD & Terrorism  
**Mod:** ICS & Scene Control  
**Mod:** Planed Response Development  
**Mod:** Planned Response Implementation  
**Mod:** Responder Health and Safety  
**Mod:** Personal Protective Equipment  
**Mod:** Personal Protection Equip. Exercise  
**Mod:** Science Form & Documentation  
**Mod:** Site Safety Plan Exercise  
**Mod:** Emergency Resp. Guide Exercise  
**Mod:** Responder Health and Safety  
**Mod:** Product Control Procedures  
**Mod:** Technical Decontamination

**Mod:** Mass Decontamination  
**Mod:** Victim Rescue & Recovery  
**Mod:** Product Control Exercise  
**Mod:** Site Safety Plan Exercise  
**Mod:** Detection Equipment  
**Mod:** Monitoring Equipment  
**Mod:** Sample Collection Equipment  
**Mod:** Product Control Exercise  
**Mod:** Decontamination Exercise  
**Mod:** Detection & Monitoring Equipment  
**Mod:** Site Safety Plan Exercise  
**Mod:** Detection & Monitoring Exercise  
**Mod:** Evidence Preservation  
**Mod:** Sample Collection Operations  
**Mod:** Illicit Laboratories Response  
**Mod:** Evidence Preservation Exercise  
**Mod:** CBRN/WMD & Terrorism Exercise  
**Mod:** Victim Decontamination & Transport  
**Mod:** Course Final Exam

## **Learning Outcomes & Evaluation**

Following the conclusion of these modules, students will be familiar with the requisite knowledge and skills needed to perform as a Hazardous Materials Operations First Responder. Written and practical evaluations will be conducted at the completion of this course.

## **40 Hour Hazardous Materials Operations Course Schedule**

### **Day 1**

#### **Morning**

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**Mod:** Orientation & Course Information  
**Mod:** Regulations, Standards, & Laws  
**Mod:** Recognizing & Identifying Hazards  
**Mod:** Material Properties & Effects  
**Mod:** Understanding the Hazards  
**Mod:** Estimating Potential Harm  
**Mod:** CBRN/WMD & Terrorism  
**Mod:** ICS & Scene Control  
**Mod:** Planned Response Development  
**Mod:** Planned Resp. Implementation  
**Mod:** Responder Health and Safety

#### **Afternoon**

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**Mod:** Personal Protective Equipment Exercise (Level B suit donning/doffing)  
**Mod:** Science Form & Documentation Exercise  
**Mod:** Site Safety Plan Exercise

### **Day 2**

#### **Morning**

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**Mod:** Emergency Response Guide Exercise  
**Mod:** Planned Resp. Implementation  
**Mod:** Responder Health and Safety  
**Mod:** Product Control Procedures  
**Mod:** Personal Protective Equipment (*Mission Specific Competency*)  
**Mod:** Technical Decontamination (*Mission Specific Competency*)  
**Mod:** Mass Decontamination (*Mission Specific Competency*)  
**Mod:** Victim Rescue & Recovery (*Mission Specific Competency*)

#### **Afternoon**

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**Mod:** Personal Protective Equipment Exercise (Level B suit donning/doffing)  
**Mod:** Product Control Exercise (Foam Application)  
**Mod:** Site Safety Plan Exercise

## Day 3

### **Morning**

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**Mod:** Responder Health and Safety  
**Mod:** Detection Equipment  
**Mod:** Monitoring Equipment  
**Mod:** Sample Collection Equipment  
**Mod:** Product Control - Dams, Dilution & Foam  
**Mod:** Personal Protective Equipment Exercise (Level B suit donning/doffing)  
**Mod:** Decontamination Exercise (Technical & Gross Decon)

### **Afternoon**

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**Mod:** Detection & Monitoring Equipment Exercise  
**Mod:** Site Safety Plan Exercise

## Day 4

### **Morning**

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**Mod:** Detection & Monitoring Equipment Exercise  
**Mod:** Evidence Preservation  
**Mod:** Sample Collection Equipment Operations  
**Mod:** Illicit Laboratories Response  
**Mod:** Personal Protective Equipment Exercise (Level B suit donning/doffing)

### **Afternoon**

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**Mod:** Evidence Preservation Exercise  
**Mod:** Product Control Exercises - Dams, Dilution & Foam  
**Mod:** Decontamination Exercise (Victim Rescue & Mass Decon)  
**Mod:** CBRN/WMD & Terrorism Exercise

## Day 5

### **Morning**

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**Mod:** Victim Decontamination & Transport Exercise (Region X Protocol)  
**Mod:** Course Final Exam

### **Afternoon**

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**Mod:** Practical Skill Assessment  
- Equipment Inspection & Cleanup  
- Course Critique Evaluations

## Reference List

Schnepp, R. (2022). *Hazardous materials: Awareness and operations* (4th ed.). Burlington, MA: Jones & Bartlett Learning.

*NFPA 1072, Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications* (2017) - Quincy, MA: National Fire Protection Association.

*Emergency Response Guidebook: a guidebook for first responders during the initial phase of a dangerous goods/hazardous materials transportation incident.* (2024). Washington, D.C.: U.S. Dept. of Transportation, Pipeline and Hazardous Materials Safety Administration.