



# Technical Skills and Safety

Course Catalog



## General Industry Courses: Advanced

Advanced level courses are for Safety Managers and Compliance Officers. They are focused on the compliance aspects of the safety standards.

### OSHA 501 Trainer Course in Occupational Safety & Health Standards for General Industry

30 hours

This course is designed for private sector personnel and presents detailed information on how the provisions of the OSHA Act may be implemented in the workplace. Rights and responsibilities under the OSHA Act, the appeals process, and recordkeeping are covered. The course also includes an introduction to OSHA's general industry standards and an overview of the requirements of the more frequently referenced standards. This course allows the student to become a trainer in the Outreach Program and to conduct both a 10- and 30-hour general industry course and issue cards to participants verifying course completion. Prerequisites include OSHA 511 course or 5 years of relevant health and safety experience. You will have 60 days from the time of registration to complete this course. This course is administered through the Rocky Mountain Education Center (OSHA Training Institute Education Center Region VIII).

**Note:** This online course has been reviewed and accepted by OSHA for online distribution.

### Outreach Training Program for General Industry

10 hours

This course is ideal for supervisors with safety and health responsibilities, and for employee safety and health awareness. Students will be introduced to OSHA policies, procedures and standards as well as general industry safety and health principles covered in OSHA Act Part 1910. Special emphasis will be placed on areas most hazardous using OSHA standards as a guide. Upon successful completion of the course, participants will receive an OSHA general industry safety and health 10-hour course completion card.

**Note:** This online course has been reviewed and accepted by OSHA for online distribution.

### Introduction to OSHA and the OSHAct: Advanced

2 hours

This course is designed for anyone who wants to learn about what OSHA is and how they govern. This course provides an overview of OSHA history, organization, and operations. Topics covered include the OSH Act, the inspection process, various programs within OSHA, clause 5(a) (1), CFR Part 1903, OSHA, OSHA Act, standards, citations, and penalties.

### OSHA Recordkeeping: Advanced

2 hours

This course is designed for private personnel who are required to maintain records of OSHA related incidents. OSHA has a specific set of rules for recordkeeping. Topics include a summary of some of the key provisions of the new OSHA recordkeeping rules, changes from previous OSHA recordkeeping rules, OSHA forms, and recording and guidelines on reporting occupational injuries and illnesses.

### OSHA Safety & Health Programs: Advanced

2 hours

This course focuses on assessing safety and health programs, emphasizing techniques to evaluate the thoroughness of the programs and the effectiveness of their implementation. The application of the OSHA Safety and Health Program Guidelines is supplemented by OSHA policy, related directives, and the current field manual. Course highlights include applying the evaluation and analysis techniques to actual program elements.

## General Industry Courses: Basic

Basic level courses are for workers who will be applying the safety standards. These courses have more application specific information as well as case studies and simulations.

### Bloodborne Pathogens: Basic

1 hour

This training course is designed to provide a basic understanding of bloodborne pathogens, common modes of their transmission, methods of prevention, and other pertinent information. Through this course, students will be able to meet the requirements of the Occupational Safety and Health Administration's (OSHA's) Bloodborne Pathogen Standard.

### Confined Spaces for General Industry: Basic

1 hours

This course is intended for all employees who are required to enter into confined or enclosed spaces. This course deals with the safety issues concerned with entering permit-required confined spaces.

### Electrical Safety for General Industry: Basic

1 hours

Every year tens of thousands of people are injured or killed from electrical shocks/contacts in the United States. Employees are exposed to dangers such as electric shock, electrocution, burns, fires and explosions. It is essential to understand that how electricity is lethal for us and how we can save our lives. This course gives you a basic understanding of prevention and elimination of work-related illnesses and injuries.

### Hazard Communication: Basic

1 hours

The Hazard Communication Standard (HCS) provides information to workers and employers about various chemical hazards that exist in the workplace, and what protective measures they can take in order to prevent the adverse effects of such hazards. This course gives you a basic understanding of how to deal with hazardous chemicals and how workers can prevent and protect themselves from fatal chemical hazards.

### Hazardous Materials: Basic

1 hours

Hazardous materials are considered any substance or compound that has a capability of producing adverse effects on the health and safety of humans. Every year thousands of workers get injured or killed because of fatal chemical or other toxic hazards. OSHA and other authorities have provided many rules and regulations in order to prevent hazards and perform safe operations at the workplace.

### Industrial Hygiene: Basic

1 hours

This course attempts to introduce the content of OSHA 1910 Subpart Z, which deals with toxic and hazardous substances. This course will focus on the aspects of Subpart Z which deal with keeping hazardous chemicals and materials from negatively affecting your health. This includes the use of personal protective equipment, cleaning procedures in the event of exposure to hazardous materials, and the procedures in place for conducting first aid and recording an incident of exposure in the workplace.

## Introduction to OSHA and the OSHAct: Basic

1 hour

This course gives a basic overview of OSHA, OSHA act, and OSHA's role in prevention and elimination of work-related illnesses and injuries. It includes information about employer and employee rights and responsibilities, and a very brief look at the inspection process, reporting and recordkeeping. This course will prove beneficial for those who are directly or indirectly involved with OSHA and OSH Act.

## Lockout/Tagout, Control of Hazardous Energy: Basic

1 hours

This course is designed to inform employees about the requirements for lockout/tagout during servicing and maintenance of machines or equipment. Also covered are the requirements of the OSHA Lockout/Tagout Standard, procedures for the application of locks and tags, and a discussion of the types of energy these procedures are designed to control.

## Machinery and Machine Guarding: Basic

1 hours

This course will help workers to protect themselves from moving machinery. After completion of this course, workers will be able to properly apply the OSHA Machine and Machine Guarding requirements to their day to day work activities.

## Materials Handling for General Industry: Basic

1 hours

This course specifies the materials handling and storage procedures developed by the Occupational Safety and Health Administration (OSHA) to reduce injuries resulting from mishandling or improper storage.

## Means of Egress and Fire Protection: Basic

1 hours

Every year thousands of people are injured or killed because of inappropriate exit routes. It is a harsh fact that inadequate egress provisions are usually more responsible for casualties and fatalities than the actual emergency. This course gives you a basic understanding of means of egress and fire protection methods. It is essential to know how we can save co-workers' lives as well as our own in workplace.

## Personal Protective Equipment: Basic

1 hours

This course will provide the employers and the employees with knowledge concerning the proper selection, care and use of personal protective equipment. They will be informed of the requirements for compliance with OSHA requirements

## OSHA Safety & Health Programs: Basic

1 hours

This course is designed for employers, supervisors, and managers who need to thoroughly understand, implement, and communicate an OSHA program. Workers who need to be educated and aware of OSHA issues within their domain will also find this course useful. Moreover, OSHA officers and coordinators who need to develop an OSHA program and ensure conformance to the policies will see this course as a must.

## Walking and Working Surfaces: Basic

1 hours

This course alerts participants to the hazards of walking and working surfaces and provides information about workplace action needed to eliminate or control these hazards.

**Welding, Cutting and Brazing for General Industry: Basic**

**1 hour**

This course is intended for all employees who are required to perform the tasks of welding, cutting or brazing. The course is specifically designed to help workers meet OSHA compliance regarding welding, cutting and brazing.

**Workplace Violence: Basic**

**1 hours**

This course attempts to highlight the problems of violence in the workplace. It identifies the various kinds and what constitutes workplace violence. The course then goes on to explain the potential costs of ignoring workplace violence and the methods that can be utilized to minimize and/or eliminate it from the workplace.

**General Industry Courses: Coming Soon**

These are courses that are currently in development and will be available in the next six months

**Outreach Training Program for General Industry**

**30 hours**

This course designed for construction personnel presents detailed information on how the provisions of the OSH Act may be implemented in the workplace. Rights and responsibilities under the OSH Act, the appeals process, and recordkeeping are covered. The course also includes an introduction to OSHA's general industry standards and an overview of the requirements of the more frequently referenced standards. This course allows the student to become a trainer in the Outreach Program and to conduct both a 10- and 30-hour construction industry course and issue cards to participants verifying course completion. (5 days). Prerequisites include five years experience in the construction industry. This course is administered through the Rocky Mountain Education Center (OSHA Training Institute Education Center Region VIII).

## General Industry Courses: Coming Soon

These are courses that are currently in development and will be available in the next six months

### OSHA 500 Trainer Course for Construction

30 hours

This course designed for construction personnel presents detailed information on how the provisions of the OSH Act may be implemented in the workplace. Rights and responsibilities under the OSH Act, the appeals process, and recordkeeping are covered. The course also includes an introduction to OSHA's general industry standards and an overview of the requirements of the more frequently referenced standards. This course allows the student to become a trainer in the Outreach Program and to conduct both a 10- and 30-hour construction industry course and issue cards to participants verifying course completion. (5 days). Prerequisites include five years experience in the construction industry. This course is administered through the Rocky Mountain Education Center (OSHA Training Institute Education Center Region VIII).

**Note:** This online course has been reviewed and accepted by OSHA for online distribution.

### Outreach Training Program for Construction

10 hours

This course is designed for construction workers, foremen, job supervisors, and anyone involved in the construction industry. OSHA recommends Outreach Training Program courses as an orientation to occupational safety and health for workers covered by OSHA 29 CFR 1926. Workers must receive additional training, when required by OSHA standards, on the specific hazards of the job. Upon successful completion of the course, participants will receive an OSHA general industry safety and health 10-hour course completion card.

**Note:** This online course has been reviewed and accepted by OSHA for online distribution.

### Introduction to OSHA, OSHA Acts and Standards: Advanced

2 hours

This course is designed for anyone who wants to learn about OSHA and what and how they govern. This course provides an overview of OSHA history, organization, and operations. Topics covered include the OSH Act, the inspection process, various programs within OSHA, clause 5(a) (1), CFR Part 1903), OSHA, OSHA Act, standards, citations, and penalties.

### CFR Part 1904 Recordkeeping: Advanced

2 hours

This course is designed for private personnel who are required to maintain records of OSHA related incidents. OSHA has a specific set of rules for recordkeeping. Topics include a summary of some of the key provisions of the new OSHA recordkeeping rules, changes from previous OSHA recordkeeping rules, OSHA forms, and recording and reporting occupational injuries and illnesses.

### OSHA Safety & Health Programs: Advanced

2 hours

This course focuses on assessing safety and health programs, emphasizing techniques to evaluate the thoroughness of the programs and the effectiveness of their implementation. The application of the OSHA Safety and Health Program Guidelines is supplemented by OSHA policy, related directives, and the current field manual. Course highlights include applying the evaluation and analysis techniques to actual program elements.

## OSHA Training Requirements and Techniques: Advanced

2 hours

This course focuses on assessing safety and health programs, emphasizing techniques to evaluate the thoroughness of the programs and the effectiveness of their implementation. The application of the OSHA Safety and Health Program Guidelines is supplemented by OSHA policy, related directives, and the current field manual. Course highlights include applying the evaluation and analysis techniques to actual program elements.

## General Safety & Health Provisions: Advanced

2 hours

This course is designed for those who want to learn about recognition, avoidance and prevention of unsafe conditions in regulated employments. Topics include definitions, recognition of unsafe conditions, avoidance of unsafe conditions, and prevention of unsafe conditions. This course focuses on the topics covered in OSHA 29 CFR 1926.20 Subpart C.

## Confined Spaces in Construction: Advanced

2 hours

This course is intended for all employees required to enter into confined or enclosed spaces. OSHA's Construction Safety and Health Regulations Part 1926 do not contain a permit-required confined space regulation. Subpart C, §1926.21 Safety training and education specifies training for personnel who are required to enter confined spaces and defines a "confined or enclosed space." All employees required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.

## Occupational Health and Environmental Controls: Advanced

2 hours

This course is designed for those in the construction industry who are exposed to health hazards and chemicals during the course of their work. Topics include definitions, hazard communication standard, asbestos standards, MDA, lead, worker protection programs, process safety management of highly hazardous chemicals, and cadmium. This course focuses on the topics covered in OSHA 29 CFR 1926 Subpart D.

## Process Safety Management of Highly Hazardous Chemicals: Advanced

2 hours

This course is intended for workers who deal with any toxic and reactive chemicals, flammable liquids and/or gases. Topics include an overview of processes, equipment, and materials commonly found in the chemical processing industries; safety and health hazard recognition; and effective hazard control techniques, and OSHA compliance policies. This course covers the topics included in OSHA 29 CFR part 1926.64 Subpart D.

## Process Safety Management of Highly Hazardous Chemicals: Advanced

2 hours

This course is intended for workers who deal with any toxic and reactive chemicals, flammable liquids and/or gases. Topics include an overview of processes, equipment, and materials commonly found in the chemical processing industries; safety and health hazard recognition; and effective hazard control techniques, and OSHA compliance policies. This course covers the topics included in OSHA 29 CFR part 1926.64 Subpart D.

## Fire Protection and Prevention: Advanced

2 hours

This course is intended for workers who want to learn about fire protection and fire prevention in the workplace. Topics include fire protection plans, fire prevention plans, and fire protection programs. This course covers the topics included in OSHA 29 CFR 1926 Subpart F.

## Materials Handling, Storage, Use, and Disposal: Advanced

2 hours

This course provides an introduction to handling materials on the job site, including moving, storing, and disposing of materials. This course is designed for construction workers, foremen and job supervisors who handle materials on a construction site. This course covers the topics included in OSHA 29 CFR 1926.250 Subpart H.

## Hand & Power Tools: Advanced

2 hours

This course is intended for workers who use hand and power tools during the course of their work. Topics include general OSHA requirements, hazard recognition, hand tools, power-operated hand tools, abrasive wheels & tools, woodworking tools, jacks-lever & ratchet, screw, & hydraulic, air receivers, mechanical power-transmission apparatus. This course covers the topics included in OSHA 29 CFR 1926 Subpart I.

## Welding & Cutting: Advanced

2 hours

This course provides workers who want to learn more about the dangers of welding and cutting. Topics include gas welding & cutting, arc welding & cutting, fire prevention, ventilation and protection, and preservative coatings. This course covers the topics included in OSHA 29 CFR 1926.35 Subpart J.

## Electrical Standards for Construction: Advanced

2 hours

This course is designed to provide the student with an understanding of OSHA's electrical standards and the hazards associated with electrical installations and equipment. Topics include single- and three-phase systems, cord- and plug-connected and fixed equipment, grounding, ground fault circuit interrupters, hazardous locations, and safety related work practices. The hazards of power generation, transmission, and distribution systems are also covered. This course covers the topics included in OSHA 29 CFR 1926 Subpart K.

## Scaffolds: Advanced

2 hours

This course focuses on the safety aspects of scaffolding and current OSHA requirements. The student is introduced to the basics of scaffolding operations from installation to dismantling. Topics include supported and suspended scaffolds, aerial lifts, and the interpretation of related standards. This course covers the topics included in OSHA 29 CFR 1926.450 Subpart L.

## Fall Protection : Advanced

2 hours

This course teaches employees to use fall protection systems in construction settings. Main topics include: the OSHA fall protection standards, fall protection systems, selection of fall protection measures, and inspection and maintenance of fall protection systems. This course covers the topics included in OSHA 29 CFR part 1926.500-503 Subpart M.

### Cranes, Derricks, Hoists, Elevators, and Conveyors: Advanced

2 hours

This course is intended for workers who want to learn more about cranes, derricks, hoists, elevators, and/or conveyors. Topics include cranes & derricks, helicopters, base-mounted drum hoists, overhead hoists, conveyors, and aerial lifts. This course covers the topics included in OSHA 29 CFR 1926.55 Subpart N.

### Motor Vehicles: Advanced

2 hours

This course is intended for workers who want to know about motor vehicles, mechanized equipment, marine operations, rollover protective structures, overhead protection, signs, signals, and/or barricades. Topics include motor vehicles, mechanized equipment, marine operations, rollover protective structures, overhead protection, signs, signals, and/or barricades. This course covers the topics included in OSHA 29 CFR 1926 Subparts O, W, and G.

### Excavations: Advanced

2 hours

This course is designed for workers and supervisors who work in trenches and excavations. Topics include the mechanics of cave-ins, how to perform a soil analysis to classify soil, protection of workers, shoring, shielding, sloping, and special situations in the field. This course covers the topics included in OSHA 29 CFR 1926.650 Subpart P.

### Concrete and Masonry Construction: Advanced

2 hours

This course is designed for construction workers who want to learn about precautions and dangers that come from concrete and masonry projects. Topics include general requirements, cast-in-place concrete, and masonry construction. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart Q.

### Demolition: Advanced

2 hours

This course is designed for demolition contractors. Topics include preparatory operations, engineering survey, utility location, medical services & first aid, police & fire contact, fire prevention & protection, special structures, concrete structures, safe blasting procedures, transportation of explosives, storage of explosives, and procedures after blasting. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart T.

### Power Transmission and Distribution: Advanced

2 hours

This course is designed for construction workers who work with electrically charge lines and devices. Topics include general requirements, emergency procedures, tools & protective equipment, mechanical agreement, material handling, grounding, overhead lines, underground lines, and energized substations. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart V.

### Stairways & Ladders: Advanced

2 hours

This course is intended for workers who use ladders and/or stairs. Topics include hazards, ladder selection, ladder maintenance, stairwell safety, and training requirements. This course covers topics included in 29 CFR 1926.1050 Subpart X.

**Workplace Violence: Advanced**

**2 hours**

This course is designed for workers who want to understand the risks of violence in the workplace and learn how they can protect themselves, fellow employees, and the public from harm. OSHA has given guidance on this topic. Topics include recognition, evaluation, control, compliance, and training.

**General Industry Courses: Coming Soon**

These are courses that are currently in development and will be available in the next six months

**Concrete and Masonry in Construction: Basic**

**1 hours**

This course is designed for construction workers who want to learn about precautions and dangers that come from concrete and masonry projects. Topics include general requirements, cast-in-place concrete, and masonry construction. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart Q.

**Confined Spaces in Construction: Basic**

**1 hours**

This course encapsulates the safety regulation of the workers working in permit required confined spaces. It instructs about the hazards that may occur during the work in confined spaces.

**Cranes, Derricks, Hoists, Elevators, and Conveyors: Basic**

**1 hours**

This course is intended for workers who want to learn more about cranes, derricks, hoists, elevators, and/or conveyors. Topics include cranes & derricks, helicopters, base-mounted drum hoists, overhead hoists, conveyors, and aerial lifts. This course covers the topics included in OSHA 29 CFR 1926.55 Subpart N.

**Electrical Standards for Construction: Basic**

**1 hours**

This course gives you a basic understanding about OSHA's role in prevention and elimination of work-related illnesses and injuries. It emphasizes over hazard identification, avoidance, control, and standards. This course covers topics included in OSHA 29 CFR 1926 Subpart K.

**Excavations: Basic**

**1 hours**

Cave-ins are considered the most dangerous trench and excavation hazard. In addition, other potentially fatal hazards also exist in excavations, such as asphyxiation due to lack of oxygen in a confined space, inhalation of toxic fumes, drowning, falls, water accumulation, etc. The OSHA standards intend to protect workers in trenches and excavations. This course gives you a basic understanding of how to work safely in excavations and what important points are required to consider when working in an excavation. This course covers topics included in OSHA 29 CFR 1926 Subpart P.

### Cranes, Derricks, Hoists, Elevators, and Conveyors: Advanced

2 hours

This course is intended for workers who want to learn more about cranes, derricks, hoists, elevators, and/or conveyors. Topics include cranes & derricks, helicopters, base-mounted drum hoists, overhead hoists, conveyors, and aerial lifts. This course covers the topics included in OSHA 29 CFR 1926.55 Subpart N.

### Motor Vehicles: Advanced

2 hours

This course is intended for workers who want to know about motor vehicles, mechanized equipment, marine operations, rollover protective structures, overhead protection, signs, signals, and/or barricades. Topics include motor vehicles, mechanized equipment, marine operations, rollover protective structures, overhead protection, signs, signals, and/or barricades. This course covers the topics included in OSHA 29 CFR 1926 Subparts O, W, and G.

### Excavations: Advanced

2 hours

This course is designed for workers and supervisors who work in trenches and excavations. Topics include the mechanics of cave-ins, how to perform a soil analysis to classify soil, protection of workers, shoring, shielding, sloping, and special situations in the field. This course covers the topics included in OSHA 29 CFR 1926.650 Subpart P.

### Concrete and Masonry Construction: Advanced

2 hours

This course is designed for construction workers who want to learn about precautions and dangers that come from concrete and masonry projects. Topics include general requirements, cast-in-place concrete, and masonry construction. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart Q.

### Demolition: Advanced

2 hours

This course is designed for demolition contractors. Topics include preparatory operations, engineering survey, utility location, medical services & first aid, police & fire contact, fire prevention & protection, special structures, concrete structures, safe blasting procedures, transportation of explosives, storage of explosives, and procedures after blasting. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart T.

### Power Transmission and Distribution: Advanced

2 hours

This course is designed for construction workers who work with electrically charge lines and devices. Topics include general requirements, emergency procedures, tools & protective equipment, mechanical agreement, material handling, grounding, overhead lines, underground lines, and energized substations. This course covers the topics included in OSHA 29 CFR 1926.7 Subpart V.

### Stairways & Ladders: Advanced

2 hours

This course is intended for workers who use ladders and/or stairs. Topics include hazards, ladder selection, ladder maintenance, stairwell safety, and training requirements. This course covers topics included in 29 CFR 1926.1050 Subpart X.

## Fall Protection: Basic

1 hours

This course gives you a basic understanding about OSHA's role in prevention and elimination of work-related illnesses and injuries. The OSHA standard identifies areas or activities where fall protection is needed. It clarifies what an employer must do to provide fall protection for employees, such as identifying and evaluating fall hazards and providing training. Under the standard, employers are able to select fall protection measures compatible with the type of work being performed. This course covers topics in OSHA 29 CFR 1926 Subpart M.

## Fire Protection and Prevention: Basic

1 hours

This course has been designed to deliver firsthand information about fires and fire protection measures. After completing this course, you will be able to identify different types of fires and how safety measures can be taken to avoid a disastrous situation. We will also discuss the different types of fire extinguishers in use and discover how careful planning and precautionary measures can be taken to save lives and property. This course is intended for the general audience. For more information, please contact your local fire department and consult your fire safety and security maintenance supervisor. This course covers topics in OSHA 29 CFR 1926 Subpart F.

## General Safety & Health Provisions: Basic

1 hours

This course provides an overview of the OSHA standard for General Safety and Health Provisions (OSHA 29 CFR 1926 Subpt C). Topics covered in this course include safety training and education, first aid, fire protection, as well as employee emergency action plans.

## Hand and Power Tools: Basic

1 hours

This course gives you a basic understanding about OSHA's role in prevention and elimination of work-related illnesses and injuries. Hand and power tools are a part of our everyday lives and help us to easily perform tasks that otherwise would be difficult or impossible. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward hand and power tool safety is necessary in order to reduce or eliminate these hazards. This course covers topics in OSHA 29 CFR 1926 Subpart I.

## Materials Handling, Storage, Use, and Disposal: Basic

1 hours

This course introduces the hazards that are involved in the handling and storage of materials. Different methods of handling and storage are discussed, the hazards they pose to workers and the methods by which these hazards can be reduced or eliminated from the workplace. This course covers topics in OSHA 29 CFR 1926 Subpart H.

## Motor Vehicles: Basic

1 hours

This course is intended for workers who want to know about motor vehicles, mechanized equipment, marine operations, rollover protective structures, overhead protection, signs, signals, and/or barricades. Topics include motor vehicles, mechanized equipment, marine operations, rollover protective structures, overhead protection, signs, signals, and/or barricades. This course covers the topics included in OSHA 29 CFR 1926 Subparts O,W,G.

## Occupational Health and Environmental Controls: Basic

1 hours

This course is designed for people working in the construction industry who are exposed to health hazards and chemicals during the course of their work. Topics include definitions, hazard communication standard, asbestos standards, MDA, lead, worker protection programs, process safety management of highly hazardous chemicals, and cadmium. This course focuses on the topics covered in OSHA 29 CFR 1926 Subpart D.

## Construction Courses: Coming Soon

These are courses that are currently in development and will be available in the next six months

### Outreach Training Program for Construction

30 hours

This course is designed for construction workers, foremen, job supervisors, and anyone involved in the construction industry. OSHA recommends Outreach Training Program courses as an orientation to occupational safety and health for workers covered by OSHA 29 CFR 1926. Workers must receive additional training, when required by OSHA standards, on the specific hazards of the job. Upon successful completion of the course, participants will receive an OSHA general industry safety and health 30-hour course completion card. Currently waiting on approval from OSHA.

## Environmental Courses

### HAZWOPER 8 hour Annual Refresher

8 hours

This course meets the requirements in OSHA 29 CFR 1910.120 for eight hours of annual refresher training for workers at hazardous waste sites. This course is designed for general site workers who remove hazardous waste or who are exposed or potentially exposed to hazardous substances or health hazards. Topics include HAZWOPER regulations, safety and health plans, hazardous chemicals, safety hazards, air monitoring, medical surveillance, site control, decontamination, personal protective equipment, and respiratory equipment. This course covers the topics in OSHA 29 CFR 1910.120. Prerequisites: Enrollment is open to those who have already

### HAZWOPER 40 hour Course

40 hours

This course is specifically designed for workers who are involved in clean-up operations, voluntary clean-up operations, emergency response operations, and storage, disposal, or treatment of hazardous substances or uncontrolled hazardous waste sites. Topics include protection against hazardous chemicals, elimination of hazardous chemicals, safety of workers and the environment, OSHA regulations. This course covers topics included in 29 CFR 1910.120. The Hazwoper 40 Hour is available, but an 8 hour in-class training needs to be associated with it. Please contact Misha Lewis at 512-441-1097 x125 to see if classroom training is available in your area!

### Industrial Emergency Response: Hazardous Materials First Responder Awareness- Level 1

8 hours

This course is designed for all employees who respond to a hazardous materials emergency. OSHA 29 CFR 1910.120 indicates that all employees who respond to a hazardous materials emergency must receive training based on their level of activities at the incident. Awareness-level training is for responders who are likely to witness or discover a hazardous materials release and will initiate a response sequence by notifying the proper authorities of the release. Topics include defining hazardous materials, recognizing and identifying the presence of hazardous materials in an emergency, potential outcomes when hazardous materials are involved, use of basic information resources, and individual roles in an emergency situation. Awareness level responders recognize the presence of hazardous materials, isolate the scene and call for appropriate assistance. They do not participate in actual cleanup activities. The course covers the topics addressed in OSHA 29 CFR 1910.120.

## Industrial Emergency Response: Hazardous Materials First Responder Operations - Level 2

8 hours

This course is designed for all employees who respond to a hazardous materials emergency. As per OSHA guidelines, these people must receive training based on their level of activities at the incident. This particular course is designed for those who are likely to respond to a hazardous materials emergency for the purpose of protecting person, property, or the environment from the effects of the release. OSHA regulations require a minimum of 8 hours training.

## Electrical Skills

### Ammeters, Meggers and Wheatstone Bridge Library

This library consists of five lessons. This library is designed for participants familiar with AC/DC theory, electrical safety, and electrical print reading. A basic understanding of electronic devices and circuits is recommended. The library describes megohmmeters, Wheatstone bridges, and clamp-on ammeters. It gives examples of the use of these instruments, identifies their components, and defines their functions. The lessons also describe safety and selection considerations for their use, how to set up the instruments, how to connect them to the systems under test, and how to take and read measurements.

#### Introduction to Megohmmeters

This is the first lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson explains Ohm's Law and how it is used when analyzing test results. The basic components, uses, and functions of a megohmmeter are described. Insulation and causes of insulation damage are also covered.

#### Using the Megohmmeter

This is the second lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson describes safety issues to consider when using a megohmmeter, how to select the correct megger for the job, setup, and the steps necessary to take a megger reading.

#### Wheatstone Bridge

This is the third lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson explains what a bridge circuit is, the purpose and components of a Wheatstone bridge, and its function.

#### Using a Wheatstone Bridge

This is the fourth lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson explains how to balance a Wheatstone bridge and the process used to set mechanical and electrical zero. How to interpret the readings of a Wheatstone bridge is also explained.

#### Clamp-on Ammeters

This is the final lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson presents the components and features and functions of clamp-on ammeters. The lesson also describes safety considerations that should be noted when selecting a clamp-on ammeter. Instruction in the procedures for setting up, taking readings, and modifying the range of a clamp-on ammeter are also covered.

## AC/DC Motor Maintenance Library

This library was designed for electricians, mechanics, and others, needing to know more about AC and DC motor maintenance. The library trains participants to understand, maintain, and test AC and DC motors. The library consists of twelve lessons.

### Introduction to AC Motor Maintenance

This is the first lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson explains the purpose of AC motor maintenance programs and the types of motor maintenance. The lesson also identifies safety procedures that should be used during motor maintenance.

### Records, Tools, and Instruments

This is the second lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson explains the purpose of keeping complete and accurate records using various record keeping formats. The lesson also identifies tools and instruments used for given tasks in motor maintenance.

### Preventive AC Motor Maintenance

This is the third lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson explains aspects of preventive motor maintenance, the steps in inspecting a motor for general maintenance and for identifying problems, and cleaning and lubricating a motor as part of a preventive motor maintenance program.

### Measurement in Preventive AC Motor Maintenance

This is the fourth lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson demonstrates the need for taking measurements, and the importance of comparing measurements. Causes and effects of current variations, temperature extremes, and vibration measurements are described.

### Preparing for Periodic AC Motor Maintenance

This is the fifth lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson identifies the characteristics of periodic motor maintenance and the major components of an AC motor. Instruction in testing winding resistance, and winding insulation resistance, as part of pre-maintenance testing is given.

### Motor Disassembly and Reassembly in Periodic AC Motor Maintenance

This is the sixth lesson in the iKNOW™ AC/DC Motor Maintenance Library.

### Corrective Maintenance for AC Motors

This is the seventh lesson in the iKNOW™ AC/DC Motor Maintenance Library. This lesson discusses causes and corrective actions for various motor malfunctions.

## Introduction to DC Motor Maintenance

This is the eighth lesson in the iKNOW™ AC/DC Motor Maintenance Library. This lesson introduces participants to DC motors and compares them to AC motors.

## Commutator Inspection

The ninth lesson in the iKNOW™ AC/DC Motor Maintenance Library, this lesson shows participants how to identify some problems that affect the commutator.

## Commutator Wear

This is the tenth lesson in the iKNOW™ AC/DC Motor Maintenance Library. This lesson trains participants to recognize friction damage, streaking, threading, and grooving, the cause of these problems, and corrective actions

## Commutator Maintenance

This is the eleventh lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson demonstrates the process of preparing a commutator for reconditioning, how to properly cut mica, how to check the commutator after maintenance, and explains the purpose of performing a commutator run-in procedure.

## Brush Maintenance

This is the final lesson in the iKNOW™ AC/DC Motor Maintenance Library. The lesson describes how to select and inspect brushes. The lesson identifies the procedures for cleaning, inspecting, and setting the height of a brush holder. How to seat brushes and adjust spring pressure is demonstrated.

## Industrial Emergency Response: Hazardous Materials First Responder Operations - Level 2

8 hours

This course is designed for all employees who respond to a hazardous materials emergency. As per OSHA guidelines, these people must receive training based on their level of activities at the incident. This particular course is designed for those who are likely to respond to a hazardous materials emergency for the purpose of protecting person, property, or the environment from the effects of the release. OSHA regulations require a minimum of 8 hours training.

## Electrical Skills

### Ammeters, Meggers and Wheatstone Bridge Library

This library consists of five lessons. This library is designed for participants familiar with AC/DC theory, electrical safety, and electrical print reading. A basic understanding of electronic devices and circuits is recommended. The library describes megohmmeters, Wheatstone bridges, and clamp-on ammeters. It gives examples of the use of these instruments, identifies their components, and defines their functions. The lessons also describe safety and selection considerations for their use, how to set up the instruments, how to connect them to the systems under test, and how to take and read measurements.

#### Introduction to Megohmmeters

This is the first lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson explains Ohm's Law and how it is used when analyzing test results. The basic components, uses, and functions of a megohmmeter are described. Insulation and causes of insulation damage are also covered.

#### Using the Megohmmeter

This is the second lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson describes safety issues to consider when using a megohmmeter, how to select the correct megger for the job, setup, and the steps necessary to take a megger reading.

#### Wheatstone Bridge

This is the third lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson explains what a bridge circuit is, the purpose and components of a Wheatstone bridge, and its function.

#### Using a Wheatstone Bridge

This is the fourth lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson explains how to balance a Wheatstone bridge and the process used to set mechanical and electrical zero. How to interpret the readings of a Wheatstone bridge is also explained.

#### Clamp-on Ammeters

This is the final lesson in the iKNOW™ Ammeters, Meggers, and Wheatstone Bridge Library. This lesson presents the components and features and functions of clamp-on ammeters. The lesson also describes safety considerations that should be noted when selecting a clamp-on ammeter. Instruction in the procedures for setting up, taking readings, and modifying the range of a clamp-on ammeter are also covered.

## AC/DC Motor Theory Library

This library was designed to provide training for electricians, mechanics, and others, that need to learn more about AC and DC motor theory. This library consists of eleven lessons that address various aspects of AC and DC motor theory.

### Introduction to AC Components and Motors

This is the first lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson identifies the components of an AC motor and explains their functions. Basic magnetic principles, sine waves, methods of increasing magnetic flux in a conductor, and how a rotating field is created in an AC Motor are presented..

### Advanced AC Motor Principles

The second lesson in the iKNOW™ AC/DC Motor Theory Library, this lesson explains synchronous speed and how to calculate it. The lesson demonstrates the relationship between phased current and rotor spin and induction and its effect on a rotor. Slip and how to calculate slip using its formula are also covered.

### Three-Phase Motors - Part 1

This is the third lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson defines and explains the components and functions of various three-phase motors. The lesson also defines torque and explains its role in motor operation.

### Three-Phase Motors - Part 2

This is the fourth lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson defines and explains the components and functions of externally excited motors, starters, and variable speed drives. There is also a review topic to reinforce the information covered in the lesson, Three-Phase Motors - Part 1.

### Single-Phase Motors

This is the fifth lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson trains the participants to distinguish single-phase motors from three-phase motors. Split-phase motors and capacitance start motors are discussed.

### Introduction to DC Motors

This is the sixth lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson introduces the learner to DC Motors and their basic components.

### Introduction to DC Motor Theory

This is the seventh lesson in the iKNOW™ AC/DC Motor Theory Library. The lesson introduces participants to DC motor theory.

## Armature Reaction, Compensation, and Induced Voltage

The eighth lesson in the iKNOW™ AC/DC Motor Theory Library, this lesson demonstrates armature reaction, compensation, and induced voltage.

## Series, Shunt, and Compound DC Motors

This is the ninth lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson instructs the participant in the design of series wound, shunt wound, and compound DC motors and how they work.

## Permanent Magnet, Universal, and Brushless DC Motors

This is the tenth lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson instructs the student in the design of permanent magnet, universal, and brushless DC motors and how they work.

## DC Motor Controls

This is the final lesson in the iKNOW™ AC/DC Motor Theory Library. This lesson trains participants in starters, rotation direction, speed control, and drive controls of DC motors.

# Conduit Installation Library

This library consists of three lessons designed for the training of electricians as well as for the multi-craft training needs of process and manufacturing facilities. This library provides instructions and interactions concerning general conduit bending and installation, in accordance with the National Electrical Code (NEC). This lesson defines a conduit system, lists general specifications for use of types of conduit, and introduces the major components or materials of a basic conduit system. This lesson also demonstrates and provides instruction on general methods and practices for cutting, cleaning, bending and installing conduit.

## Conduit System Materials

This is the first lesson in the iKNOW™ Conduit Installation Library. This lesson introduces the learner to conduit systems and components, and instructs in the use of trade size and fill charts.

## Conduit Bending

This is the second lesson in the iKNOW™ Conduit Installation Library. This lesson instructs the learner in the proper methods of cutting, cleaning, and bending conduit. The lesson also demonstrates how to make various bends and when different bends are used.

## Conduit Layout and Installation

This final lesson in the iKNOW™ Conduit Installation Library explains the procedure used to plan, measure, and install a conduit system.

## Electrical Print Reading Library

This library consists of eight lessons. The lessons in this library present general information about electrical schematics and electrical diagrams showing and explaining how to read and interpret the symbols on an electrical schematics and electrical diagrams.

### Introduction to Electrical Schematics

This is the first lesson in the iKNOW™ Electrical Print Reading Library. This lesson teaches about input, logic, and output devices, and the state in which symbols are drawn on electrical schematics.

### Electrical Schematic Symbols - Input Devices

This is the second lesson in the iKNOW™ Electrical Print Reading Library. The lesson presents the symbols for various manually and process actuated input devices and how they are represented on an electrical schematic.

### Electrical Schematic Symbols - Logic and Output Devices

This is the third lesson in the iKNOW™ Electrical Print Reading Library. This lesson defines the function of logic and output elements of a control circuit and presents the symbols for various logic and output devices.

### Interpreting Electrical Schematics

This is the fourth lesson in the iKNOW™ Electrical Print Reading Library. This lesson describes the steps for interpreting the relationships among the input, logic, and output components of an electrical schematic

### Introduction to Electrical Diagrams

This is the fifth lesson in the iKNOW™ Electrical Print Reading Library, and the first lesson covering electrical diagrams. This lesson presents information about the purpose of various types of electrical diagrams and how to interpret the information in the title block. It also explains how to make electrical drawing revisions.

### Building Electrical Diagrams

This is the sixth lesson in the iKNOW™ Electrical Print Reading Library. This lesson presents the different views used in electrical diagrams as well as how to identify components, cables, and conduits. The cable chart is also presented.

### Single-Line Electrical Diagrams

This is the seventh lesson in the iKNOW™ Electrical Print Reading Library. This lesson presents information regarding how to identify loads, equipment, and isolation breakers on a single-line electrical diagram.

### Single-Line Electrical Diagrams

This is the final lesson in the iKNOW™ Electrical Print Reading Library. The lesson presents information how to identify components, equipment, wires and cables on a wiring diagram. It also explains how to relate a wiring diagram to the installed hardware and how to use diagrams for maintenance and troubleshooting problems.

## Electrical Safety Library

This library consists of eight lessons. The lessons in this library were designed to provide training for electricians, mechanics, and others working with or around electricity. The lessons in this library provide an understanding of electricity focused on increased awareness and prevention of industrial accidents.

### Working Safely with Electricity

This is the first lesson in the iKNOW™ Electrical Safety Library. This lesson forms the foundation for the other lessons in Electrical Safety Library. The lesson explains safe work habits and basic safety rules that should be used when working around electricity. The importance of safely using circuits, the dangers of static electricity and the methods used to control it, is discussed. The use of fire extinguishers and how to identify the correct type of fire extinguisher to use on an electrical fire is also presented.

### Electrical Circuits and Supplies

This is the second lesson in the iKNOW™ Electrical Safety Library. This lesson explains the relationship between voltage, current and resistance. It also demonstrates the correct method for selecting, inspecting, and handling extension cords and portable electric hand tools, and the purpose of ground fault interrupters is explained.

### Electrical Shock

This is the third lesson in the iKNOW™ Electrical Safety Library. This lesson describes the effects electrical current has on the human body. Proper methods of removing a victim from an energized circuit are discussed. Who is "qualified" to perform a particular task and alerting techniques are introduced.

### Electrical Personal Protective Equipment

This is the fourth lesson in the iKNOW™ Electrical Safety Library. This lesson defines personal protective equipment. The need for various alerting techniques, barriers, and attendants, and their roles is discussed, as well as the importance of following safe work habits. In addition, the lesson reinforces the requirements for being "qualified" for a particular task introduced in lesson 3, Electrical Shock.

### Protective Gloves and Sleeves

This is the fifth lesson in the iKNOW™ Electrical Safety Library. This lesson discusses the types and classes of protective gloves and sleeves used when working around electricity. The lesson identifies the proper practices for inspecting, repairing, wearing, and maintaining gloves and sleeves.

### Eye and Face Protection

This is the sixth lesson in the iKNOW™ Electrical Safety Library. This lesson explains the importance of eye and face protection, as well as the proper practices for its inspections, care, and wear.

### Protective Helmets

This is the seventh lesson in the iKNOW™ Electrical Safety Library. This lesson explains the protection provided by helmets, and the proper methods of inspection, wearing, and maintaining a helmet.

### General Protective Equipment

This is the eighth lesson in the iKNOW™ Electrical Safety Library. This lesson presents information about safeguards, other than Personal Protective Equipment worn on the body, used when working with or around electricity. Inspection, repair, and care of general protective equipment, and proper use of this equipment are presented.

## Electrical Theory for Troubleshooters Library

This library consists of twelve that are excellent for the training of electricians and electronic technicians, as well as for the multi-craft training needs of process and manufacturing facilities.

### Introduction to Electricity

This is the first lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson uses animation to demonstrate atomic structure, electricity, and how a simple circuit operates. The lesson also explains the characteristics of good conductors and insulators.

### Basic Electrical Properties

This is the second lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson covers Ohm's Law, as well as the use of Ohm's Law to calculate an unknown value. The lesson also defines voltage, current, resistance, and power.

### Series Circuits

This is the third lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. The lesson presents the operation of a series circuit and trains participants in the identification of simple schematic symbols used to represent components in a series circuit. The behavior of current, resistance, and current in a series circuit, and the used of Kirchhoff's Voltage Law to find total voltage are also covered.

### Parallel Circuits

This is the fourth lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson describes the behavior of voltage, current, and resistance in a parallel circuit. The learner is also instructed in the identification of the series and parallel portions of a series-parallel circuit.

### Alternating Current

This is the fifth lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson teaches the basic AC characteristics of voltage, including how voltage changes over time. The participant is also instructed in using sine waves to interpret the frequency of AC voltage.

### Electromagnetism

This sixth lesson in the iKNOW™ Electrical Theory for Troubleshooters Library uses animations and demonstrations to explain the principles of magnetism, including flux density and electromagnetic induction. The lesson also shows how to plot a sine wave using a graph.

### Inductance

This is the seventh lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson builds on the information presented in the lesson, Electromagnetism. Types of induction, phase, and the effect of induction in AC circuits are covered.

### Capacitance

This is the eighth lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson explains capacitors, their function, and how capacitance affects AC circuits.

### Three-Phase AC Circuits

This is the ninth lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson defines 3-phase AC, describes the components and operating principle of 3-phase generators, and using the formula for frequency, shows how rotor speed and the number of poles is related to frequency.

### Wye and Delta Connections

The tenth lesson in the iKNOW™ Electrical Theory for Troubleshooters Library, this lesson discusses Wye and Delta configurations and explains the relationship between phase and line voltages in various connections, and demonstrates the application of the formula that shows this relationship.

### Introduction to Transformers

The eleventh lesson in the iKNOW™ Electrical Theory for Troubleshooters Library, this lesson presents the basic parts of a transformer and their function. The lesson explains turns ratio and its relationship to a transformer's input and output voltages. The participant is also cautioned regarding the dangers of improper transformer connections.

### Transformers

This is the final lesson in the iKNOW™ Electrical Theory for Troubleshooters Library. This lesson builds on the information presented in the lesson, Introduction to Transformers. How to determine primary current and voltage, secondary current and voltage, and load is taught. The function of various transformers is also explained.

## Multimeters Library

This library consists of five designed to provide training for persons working with electrical or electronic test equipment. These lessons demonstrate and explain how to use both a digital and an analog multimeter. During these lessons, voltage, resistance, current, capacitance, and frequency are measured. The final lesson also describes some of the more common features of a digital multimeter.

### Digital Multimeters

This is the first lesson in the iKNOW™ Multimeters Library. The lesson presents the types of multimeters. The lesson describes the display area, function switch, and leads and jacks on a digital multimeter.

### Analog Multimeters

This is the second lesson in the iKNOW™ Multimeters Library. This lesson demonstrates various aspects of an analog multimeter, including how to adjust mechanical zero, how to interpret a reading on the voltage and resistance scales, and how to set the function and range switches.

### Multimeter Selection and Inspection

This is the third lesson in the iKNOW™ Multimeters Library. This lesson trains the learner in the inspection of a multimeter, the steps that should be taken before using a multimeter, and how to perform a continuity check.

### Using Multimeters

This is the fourth lesson in the iKNOW™ Multimeters Library. This lesson trains the learner to use a multimeter to measure resistance, AC voltage, DC voltage, current, frequency, and capacitance.

### Advanced Features of Digital Multimeters

The final lesson in the iKNOW™ Multimeters Library, this lesson instructs the participant in the use of the advanced features of digital multimeters.

## Oscilloscopes Library

This library contains nine lessons designed for the training of electricians and electronic technicians as well as for the multi-craft training needs of process and manufacturing facilities. These lessons are designed for participants familiar with AC and DC theory, electrical safety, and electrical print reading. A basic understanding of electronic devices and circuits is recommended. The lessons in this library explain and demonstrate the use of both analog and digital oscilloscopes. Participants will learn the controls on each type of oscilloscope, how to use a probe with an oscilloscope, how to set up an oscilloscope, and how to determine various measurements taken with an oscilloscope.

### Introduction to Oscilloscopes

This is the first lesson in the iKNOW™ Oscilloscopes Library. This lesson explains the purpose of oscilloscopes, introduces waveforms, and presents analog and digital oscilloscope systems using a flowchart.

### The Display

This is the second lesson in the iKNOW™ Oscilloscopes Library. This lesson explains the functions of the display and display controls on an analog and digital oscilloscope. The lesson also explains how divisions are used.

### Vertical System Controls

This is the third lesson in the iKNOW™ Oscilloscopes Library. This lesson explains the vertical system controls on analog and digital oscilloscopes.

### Horizontal System Controls

This is the fourth lesson in the iKNOW™ Oscilloscopes Library. This lesson explains the horizontal system controls on analog and digital oscilloscopes.

### Probes

This is the sixth lesson in the iKNOW™ Oscilloscopes Library. This lesson explains the purpose and use of probes, and trains the participant to match the probe/scope combination to the application.

### Setup

This is the seventh lesson in the iKNOW™ Oscilloscopes Library. This lesson trains the participant to safely setup an oscilloscope for use, how to adjust the controls, and compensate the probe.

### Waveforms

This is the eighth lesson in the iKNOW™ Oscilloscopes Library. This lesson teaches participants to recognize the various waveform types and how to analyze waveforms.

### Measurement

This is the final lesson in the iKNOW™ Oscilloscopes Library. This lesson teaches how to determine various measurements taken with an oscilloscope.

## Electrical Safety for General Industry: Advanced

2 hours

This course provides an overview of basic electrical safety for individuals with little or limited training or familiarity with electrical hazards and is designed for any worker who may use extension cords, electric tools, etc. This course covers the topics included in OSHA 29 CFR 1910, Subpart S.

## Ergonomics (Repealed): Advanced

2 hours

This course is designed for employees who want learn about stress and strain due to the physical office environment. Topics include proper on-the-job stress and strain, Cumulative Trauma Disorder (CTD), work station set, workplace injury and discomfort, choosing and adjusting office equipment, proper light sources and setups, reducing your risk of injury, stretches, potential types of injury, and demonstrates numerous exercises for coping with on-the-job stress and strain. OSHA had previously given guidance on this topic via OSHA 29 CFR 1910 but later removed it.

## Bloodborne Pathogens: Advanced

2 hours

This course is for workers with potential occupational exposure to blood or other potentially infectious materials in the course of performing their assigned duties and tasks. Topics include an overview of the regulatory requirements covering bloodborne pathogens, symptoms of bloodborne diseases, recommended engineering control measures, proper disposal of contaminated materials, selection of personal protective equipment (PPE), corrective actions, information on post-exposure evaluation, and signs and labels. This course focuses on the requirements of OSHA 29 CFR 1910, Subpart Z.

## Hazard Communication: Advanced

2 hours

This course is designed for workers who may come into contact with hazardous chemicals during the course of their work. Topics include an overview of hazard communication standards, requirements and responsibilities, training requirements, how to make a hazard determination, hazardous chemical characteristics, container labeling and other hazard warnings, material safety data sheets, employee training requirements, hazard prevention, minimization, preparedness, and exposure monitoring plans. This course focuses on the specific requirements of OSHA 29 CFR 1910, Subpart Z.

## Industrial Hygiene: Advanced

2 hours

This course covers industrial hygiene practices and related OSHA regulations and procedures. Topics include permissible exposure limits, OSHA health standards, respiratory protection, engineering controls, hazard communication, OSHA sampling procedures and strategy, workplace health program elements, and other industrial hygiene topics. Course highlights include workshops in health hazard recognition, OSHA health standards, and a safety and health program workshop. This course covers the topics included in OSHA 29 CFR 1910, Subpart Z.

## Workplace Violence: Advanced

2 hours

This course is designed for workers who want to understand the risks of violence in the workplace and learn how they can protect themselves, fellow employees, and the public from harm. OSHA has given guidance on this topic. Topics include recognition, evaluation, control, compliance, and training.

### OSHA Training Requirements and Techniques: Advanced

2 hours

This course covers some techniques to use when preparing, delivering and evaluating occupational health and safety training. Topics covered include training skills development, planning effective presentations, effective and ineffective training methods, and the characteristics of effective learning in an adult setting.

### Walking and Working Surfaces: Advanced

2 hours

This course is for workers who are interested in learning about the dangers of slip and fall accidents. Slips and falls on walking & working surfaces constitute the majority of general industry accidents. Topics include applicable OSHA Standard overview, walking on surfaces, and the dangers of falls in the workplace. This course covers the topics included in OSHA 20 CFR 1910, Subpart D.

2 hours

This course covers how to recognize potential fire hazards and how to implement emergency procedures. Topics include the chemistry of fire, types and effectiveness of extinguishing agents, means of egress, detection and alarm systems, fire brigades, fire prevention plans, and the Life Safety Code (NFPA 101). This course covers the topics included in OSHA 29 CFR 1910, Subparts E and L.

### Hazardous Materials: Advanced

2 hours

This course covers OSHA general industry standards and integrates materials from other consensus and proprietary standards that relate to hazardous materials. Topics include flammable and combustible liquids, compressed gases, LP-gas, cryogenic liquids, anhydrous ammonia and related processes such as welding, spraying, dipping, electrical equipment, and ventilation. This course covers the topics included in OSHA 29 CFR 1910, Subpart H.

### Personal Protective Equipment: Advanced

2 hours

This course is designed for workers who are interested in learning about what OSHA requires for personal protective equipment. Topics include training on what PPE is necessary, when it is necessary, how to properly don, doff, adjust, and wear PPE, the limitations of PPE, and the proper care, maintenance, useful life, and disposal of PPE. This course covers topics included in OSHA 29 CFR 1910, Subpart I.

### Confined Spaces for General Industry: Advanced

2 hours

This course is designed to enable students to recognize, evaluate, control, and abate safety and health hazards associated with permit-required confined space entry. This course covers the topics included in OSHA 29 CFR 1910, Subpart J.

### Lockout/Tagout, Control of Hazardous Energy: Advanced

2 hours

This course is for private personnel training who are required to service, maintain or work around energized equipment. Topics included an overview of OSHA's Control of Hazardous Energy standard, controls and procedures required to prevent the unexpected energization, start-up or release of stored energy and the dangers involved, methods to recognize different types of energy hazards, definitions of authorized, affected, and other employees, energy-isolating device definitions, definitions of lock & tag, program categories, energy control procedure, and appropriate control procedures. This course focuses on the specific requirements of OSHA 29 CFR 1910, Subpart J.

### Fire Protection: Advanced

2 hours

This course contains requirements for fire brigades, all portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of OSHA 29 CFR 1910, Subpart L.

### Materials Handling for General Industry: Advanced

2 hours

This course is designed for workers who are interested in learning about safely handling and storing materials. Topics include the improper handling and storing of materials, potential accidents that may occur from unsafe or improperly handled equipment, improper work practices, and recognition of methods for eliminating, or at least minimizing, the occurrence of accidents. This course covers the topics included in OSHA 29 CFR 1910, Subpart N.

### Powered Industrial Trucks (Forklift Safety): Advanced

2 hours

This course is designed for private personnel who want to enhance the safe operation of powered industrial trucks in the workplace. Topics include an overview of the OSHA standard and safety standards for safe operation of industrial trucks. This course covers the topics included in OSHA 29 CFR 1910, Subpart N.

### Machinery and Machine Guarding: Advanced

2 hours

This course familiarizes the student with various types of common machinery and the related safety standards. Topics include the hazards associated with various kinds of machinery and the control of hazardous energy sources (lockout/tagout). The course presents an approach to machinery inspection that enables participants to recognize hazards and to provide suggestions to abate hazards. Hazards include mechanical motions and actions created by points of operation and other machinery processes. This course covers topics included in OSHA 29 CFR 1910, Subpart O.

### Welding, Cutting, and Brazing for General Industry: Advanced

2 hours

This course familiarizes the student with basic precautions for welding, cutting and brazing as well as outlining the fire protection and prevention responsibilities of welders and cutters, their supervisors (including outside contractors) and those in management on whose property cutting and welding is to be performed. This course covers the topics included in the Standard for Fire Prevention in Use of Cutting and Welding Processes, NFPA Standard 51B, 1962 and OSHA 29 CFR 1910, Subpart Q.

## Mechanical Skills

### Hand Tools Library

This library consists of four lessons. This library is designed for employees in all disciplines as well as for the multi-craft training needs of process and manufacturing facilities. Upon completion of this lesson, participants will be able to improve their on-the-job performance through the proper use hand tools.

#### Clamps, Vises, and Pliers

This is the first lesson in the iKNOW™ Hand Tools Library. This lesson introduces and demonstrates the proper use of tools used for holding.

#### Screwdrivers

This is the second lesson in the iKNOW™ Hand Tools Library. This lesson introduces and demonstrates the proper use of screwdrivers.

#### Vertical System Controls

This is the third lesson in the iKNOW™ Oscilloscopes Library. This lesson explains the vertical system controls on analog and digital oscilloscopes.

#### Wrenches

This is the third lesson in the iKNOW™ Hand Tools Library. This lesson introduces and demonstrates the proper use of wrenches.

#### Hammers, Mallets, and Sledges

This is the final lesson in the iKNOW™ Hand Tools Library. This lesson introduces and demonstrates the proper use of tools used for striking.

## Industrial Hydraulic Power Library

This library consists of thirteen lessons. These lessons were designed for beginning hydraulic technicians as well as mechanics, electricians, operators, and for those individuals who need to learn more about industrial hydraulic power. The lessons in this library train participants to identify system components, read schematics, and understand the conditions necessary for proper operation of a hydraulic system.

### Introduction to Hydraulic Systems

This is the first lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson identifies the basic components of an industrial hydraulic system and explains their functions. Formulas, including Pascal's Law, are presented and their use in determining values in a hydraulic system is explained.

### Hydraulic Schematics

This is the second lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson introduces the schematic symbols that represent the basic components of a hydraulic system. It explains the use of color-coding used to identify pressure and how to identify the flow path through the system using schematics.

### Hydraulic Fluids

This is the third lesson in the iKNOW™ Industrial Hydraulic Power Library. The lesson discusses the types, properties, and functions of hydraulic fluids and the components in which they are used.

### Hydraulic Pump Applications

The fourth lesson in the iKNOW™ Industrial Hydraulic Power Library, this lesson discusses the various hydraulic pumps and their applications. It also describes symptoms of pump malfunction.

### Positive Displacement Pumps

This is the fifth lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson describes various positive displacement pumps and their components. The lesson explains some of the causes of system inefficiencies associated with fixed volume pumps and describes applications in which variable volume pumps are used.

### Hydraulic Accumulators

This is the sixth lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson describes the common accumulators and their schematic symbols. It also describes the application and operation of an accumulator in a hydraulic system. Safety considerations for depressurizing and pre-charging an accumulator are discussed.

### Pressure Control Principles

This is the seventh lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson describes the functions of a pressure relief valve in a hydraulic system and the conditions necessary for normal operation of a pressure relief valve. Pressure characteristics, the relationship of pressure and flow, and depressurization are also discussed.

### Pressure Control Operation

The eighth lesson in the iKNOW™ Industrial Hydraulic Power Library, this lesson presents various pressure control valves, their operation, and components.

## Pressure Control Valve Applications

This is the ninth lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson describes the proper operation of pressure control valves used in various applications.

## Directional Control Principles

This is the tenth lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson describes various directional control valves. The lesson explains the function of the ports on a directional control valve and instructs the process of tracing the various flow paths through the valve. The lesson also describes the centering conditions and piloting arrangements commonly used with directional control valves

## Flow Control Valves

This is the eleventh lesson in the iKNOW™ Industrial Hydraulic Power Library. The lesson demonstrates how to determine speed and flow rates and differential pressure. It describes various valves, their components, and their uses.

## Actuator Cylinders

This is the twelfth lesson in the iKNOW™ Industrial Hydraulic Power Library. This lesson describes the various cylinders used in hydraulic actuators. It also describes the operation of a cylinder controlled by regulating flow or pressure, and the purpose of a cylinder leak test.

## Hydraulic Motors

This is the final lesson in the iKNOW™ Industrial Hydraulic Power Library. General knowledge of hydraulic schematics is required. Review of the lesson, Hydraulic Schematics, is recommended. This lesson describes various hydraulic motors and their functions. It also describes the operation of various hydrostatic drive circuits and the function of components and flowpath in a braking circuit.

## Mechanical Print Reading Library

This library consists of four lessons. This lesson was designed to provide training for maintenance technicians, mechanics, electricians, and others requiring knowledge of mechanical print reading. The lessons in this library show and explain how to read and interpret various mechanical drawings.

### Introduction to Mechanical Print Reading

This is the first lesson in the iKNOW™ Mechanical Print Reading Library. This introductory lesson trains the learner to identify the various parts of mechanical drawings and their components.

### Lines Used in Mechanical Print Reading

This is the second lesson in the iKNOW™ Mechanical Print Reading Library. This lesson explains the types of lines used in mechanical print reading and what they represent.

### Dimensions in Mechanical Print Reading

This is the third lesson in the iKNOW™ Mechanical Print Reading Library. This lesson explains the use of dimension and extension lines in mechanical print reading, and how to calculate dimensions, tolerance, and limits. The use of surface finish designations is also discussed.

### Orthographic Projection

This is the final lesson in the iKNOW™ Mechanical Print Reading Library. This lesson trains participants in the use of orthographic projections in mechanical print reading. Pictorial drawings and various views used in mechanical print reading are demonstrated. The lesson also discusses aspects of sectional views, threaded fasteners, and how to identify thread designations.

## Mechanical Seals

This library consists of four lessons designed for persons with a basic understanding of the operation and maintenance of pumps, agitators, and rotating equipment. The lessons in this library train participants to work effectively with mechanical seals. The functions, operation, and repair of common mechanical seals are demonstrated. The library presents specific procedures for failure analysis and identification, seal removal, disassembly, reassembly, and installation.

### Introduction to Mechanical Seals

This is the first lesson in the iKNOW™ Mechanical Seals Library. The lesson explains the purpose and basic components of mechanical seals. The participant is instructed in the identification and characteristics of materials commonly used to make seal faces and seal hardware, and to understand the limitations of seals. Characteristics, limitations, and application of packing are also discussed.

### Mechanical Seal Designs

This is the second lesson in the iKNOW™ Mechanical Seals Library. It describes various seal designs and their application. The lesson also describes conditions that may affect mechanical seal performance.

### Failure Analysis

This is the third lesson in the iKNOW™ Mechanical Seals Library. This lesson demonstrates the steps necessary to prepare to remove, and to remove, a failed mechanical seal. The lesson trains the participant in failure analysis to determine the cause of seal failure and identify the means to correct the problem or condition that caused the failure.

### Mechanical Seal Maintenance

This, the final lesson in the iKNOW™ Mechanical Seals Library, trains the learner in seal disassembly and reassembly, O-ring installation, and seal installation.

## Precision Measuring Instruments

This library consists of four lessons. The lessons in this library were designed for employees in all disciplines as well as for the multi-craft training needs of process and manufacturing facilities. In order to successfully complete these lessons participants should be familiar with whole number operations and decimals. This library describes the purpose and the basic components of some common precision measuring instruments. The library also provides procedures for properly using each of these instruments to measure the dimensions of an object.

### Dial Calipers

This is the first lesson in the iKNOW™ Precision Measuring Instruments Library. This lesson describes the purpose and the basic components of dial calipers. The lesson also provides procedures for properly using a dial caliper to measure the dimensions of an object.

### Micrometers

This is the second lesson in the iKNOW™ Precision Measuring Instruments Library. This lesson describes the purpose and the basic components of outside micrometers, inside micrometers, and depth micrometers. The lesson also provides procedures for properly using each of these instruments to measure the dimensions of an object.

### Telescoping and Thickness Gauges

This is the third lesson in the iKNOW™ Precision Measuring Instruments Library. This lesson describes the purpose and the basic components of telescoping gauges and thickness gauges. The lesson also provides procedures for properly using each of these instruments to measure the dimensions of an object.

### Dial Indicators

This is the final lesson in the iKNOW™ Precision Measuring Instruments Library. This lesson describes the purpose and the basic components of dial indicators. The lesson also provides procedures for properly using dial indicators to measure the dimensions of an object.

## General Skills

### Office Computer Data Security

This library consists of one lesson designed to provide training for anyone using computers in the workplace.

### Troubleshooting Skills: Developing Logical Thinking

This library consists of four lessons. The lessons in this library teach strategic troubleshooting skills that can be applied to the analysis of problems in any type of industrial system. This library teaches participants how to develop logical thinking and create a personal troubleshooting outlook that will prove valuable under any troubleshooting situation.

#### Introduction to Troubleshooting

This is the first lesson in the iKNOW™ Troubleshooting Skills: Developing Logical Thinking Library. This lesson defines root cause problem solving and troubleshooting. The lesson also describes the basic steps in a general troubleshooting procedure.

#### Information Gathering

This is the second lesson in the iKNOW™ Troubleshooting Skills: Developing Logical Thinking Library. This lesson presents the steps involved in interviewing and researching to obtain information about a malfunctioning system and the importance of investigating the normal operation and history of the system. The relationship between symptom and cause is also explained.

#### Troubleshooting

This is the third lesson in the iKNOW™ Troubleshooting Skills: Developing Logical Thinking Library. This lesson teaches participants to develop a troubleshooting plan to evaluate problems. The importance of schematics in troubleshooting, steps necessary to repair the problems, and prevention of future trouble is discussed.

#### Improving Skills

This is the final lesson in the iKNOW™ Troubleshooting Skills: Developing Logical Thinking Library. This lesson uses the information taught in the previous lessons in the library to assist in improving the learner's troubleshooting skills. The learner will be instructed in the steps needed to prevent future trouble, what is required when it is necessary to troubleshoot under pressure, and the importance of gaining troubleshooting experience.