International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

Courses from October 15, 2024 - December 14, 2024

Course - Session	Date(s)
Crane Operations - Assembly/Disassembly of Luffing Crawler Cranes	Oct 7, 2024 - Oct 18, 2024
Pipeline - Excavator Procedures for Existing Live Pipelines	Oct 7, 2024 - Oct 19, 2024
Teaching Techniques II	Oct 13, 2024 - Oct 18, 2024
Drone Training	Oct 14, 2024 - Oct 18, 2024
Crane Operations - Practical Testing for NCCCO Certification	Oct 14, 2024 - Oct 18, 2024
Pipeline - Sideboom - Intro to Pipeline Sideboom	Oct 14, 2024 - Oct 19, 2024
Pipeline - Excavator - Intro to pipeline excavator	Oct 14, 2024 - Oct 19, 2024
Pipeline - Angle Dozer - Beginner	Oct 14, 2024 - Oct 19, 2024
Pipeline - Introduction to Horizontal Directional Drilling	Oct 14, 2024 - Oct 19, 2024
Thermography & Vibration Analysis	Oct 15, 2024 - Oct 16, 2024
Indoor Air Quality	Oct 18, 2024 - Oct 20, 2024
Cooling Tower Operation & Maintenance	Oct 19, 2024 - Oct 20, 2024
Welding	Oct 21, 2024 - Oct 25, 2024
Excavation Operations	Oct 21, 2024 - Oct 25, 2024
Electrical Systems 2	Oct 21, 2024 - Oct 25, 2024
Mechanics Training - Electronic Fundamentals	Oct 21, 2024 - Oct 25, 2024
Pipeline - Sideboom - Intro to Pipeline Sideboom	Oct 21, 2024 - Oct 26, 2024
Pipeline - Excavator - Intro to pipeline excavator	Oct 21, 2024 - Oct 26, 2024

International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

Pipeline - Angle Dozer - Beginner	Oct 21, 2024 - Oct 26, 2024
Pipeline - Trench Box Training	Oct 21, 2024 - Oct 26, 2024
Pipeline - Introduction to Horizontal Directional Drilling	Oct 21, 2024 - Oct 26, 2024
Crane Operations - Practical Testing for NCCCO Certification - Telehandler Only	Oct 21, 2024 - Oct 25, 2024
Electrical Troubleshooting & Variable Frequency Drive Operations	Oct 24, 2024 - Oct 27, 2024
Boiler Operations 1	Oct 28, 2024 - Nov 1, 2024
Automated Lighting Controls by Lutron Electronics	Oct 28, 2024 - Oct 29, 2024
Crane Operations - Crane Standards Training and Load Chart Review for Written Exam – Mobile Cranes	Oct 28, 2024 - Oct 31, 2024
Pipeline - Sideboom - Intro to Pipeline Sideboom	Oct 28, 2024 - Nov 2, 2024
Pipeline - Excavator - Intro to pipeline excavator	Oct 28, 2024 - Nov 2, 2024
Pipeline - Angle Dozer - Beginner	Oct 28, 2024 - Nov 2, 2024
Pipeline - Excavator procedures for Road Bore approaches	Oct 28, 2024 - Nov 2, 2024
Pipeline - Introduction to Horizontal Directional Drilling	Oct 28, 2024 - Nov 2, 2024
Motorgrader Operations	Oct 28, 2024 - Nov 1, 2024
OSHA 510 Safety & Health Standards for the Construction Industry	Oct 29, 2024 - Nov 1, 2024
Mechanics Training - Intro to Mobile Air Conditioning Systems / 609 MACS Certification	Oct 29, 2024 - Oct 31, 2024
Pipeline - ONLINE OILER TRAINING	Nov 1, 2024 - Nov 1, 2024
HVAC Troubleshooting & Rooftop Unit Maintenance	Nov 2, 2024 - Nov 4, 2024

International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

Basic Controls and Building Automation Systems	Nov 2, 2024 - Nov 4, 2024
OSHA 500 Trainer Course Construction Industry	Nov 2, 2024 - Nov 5, 2024
Drone Training	Nov 4, 2024 - Nov 8, 2024
Excavation Operations	Nov 4, 2024 - Nov 8, 2024
Welding	Nov 4, 2024 - Nov 8, 2024
Low Pressure Boiler Operations	Nov 4, 2024 - Nov 8, 2024
Testing & Balancing for Air & Hydronic Systems	Nov 4, 2024 - Nov 8, 2024
Crane Operations - Intro To Luffing Crawler Crane Operations	Nov 4, 2024 - Nov 8, 2024
Crane Operations - All Terrain Crane Set-up & Operations	Nov 4, 2024 - Nov 8, 2024
Pipeline - Sideboom - Hydraulic Controls	Nov 4, 2024 - Nov 23, 2024
Pipeline - Excavator - Intro to Pipeline Excavator - Kentucky	Nov 4, 2024 - Nov 9, 2024
Pipeline - Excavator - Intermediate	Nov 4, 2024 - Nov 23, 2024
Pipeline - Angle Dozer - Intermediate	Nov 4, 2024 - Nov 23, 2024
Pipeline - Horizontal Directional Drilling with Mud Reclamation System	Nov 4, 2024 - Nov 23, 2024
Pipeline - Hydro-Excavation	Nov 4, 2024 - Nov 9, 2024
Mechanics Training - Intro to Diesel Laptops & Diagnostic Software	Nov 4, 2024 - Nov 8, 2024
GPS Machine Control Training	Nov 4, 2024 - Nov 8, 2024
Pipeline - Excavator - Pipe Handling	Nov 4, 2024 - Nov 9, 2024
Generator Maintenance & Operation	Nov 5, 2024 - Nov 8, 2024
Advanced Controls & Building Automation Systems	Nov 9, 2024 - Nov 11, 2024

International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

40-Hour HAZWOPER	Nov 11, 2024 - Nov 15, 2024
Crane Operations - Level 2 Luffing Crawler Crane Operations	Nov 11, 2024 - Nov 15, 2024
Crane Operations - Level 1 Crane Operations for Beginners	Nov 11, 2024 - Nov 15, 2024
Pipeline - Angle Dozer - Beginner - Kentucky	Nov 11, 2024 - Nov 16, 2024
Pipeline - Excavator Procedures for Existing Live Pipelines	Nov 11, 2024 - Nov 23, 2024
Pipeline - Hydro-Excavation	Nov 11, 2024 - Nov 16, 2024
Pipeline - John Henry Rock Drilling - Kentucky	Nov 11, 2024 - Nov 16, 2024
Crane Operations - All Terrain Crane Set-up & Operations	Nov 11, 2024 - Nov 15, 2024
Tractor Loader-Backhoe Operations	Nov 11, 2024 - Nov 15, 2024
GPS Overview - Introduction to GPS	Nov 11, 2024 - Nov 15, 2024
Solar Panel Installation Maintenance & Troubleshooting	Nov 13, 2024 - Nov 16, 2024
Excavation Operations	Nov 18, 2024 - Nov 22, 2024
Welding	Nov 18, 2024 - Nov 22, 2024
Pump Maintenance & Operation	Nov 18, 2024 - Nov 21, 2024
Electrical Systems 1	Nov 18, 2024 - Nov 22, 2024
Mechanics Training - Diesel Engine Fundamentals	Nov 18, 2024 - Nov 22, 2024
Crane Operations – Tower Crane Standards Training & Load Chart Review / NCCCO Practical Testing for Tower Crane Certification	Nov 18, 2024 - Nov 22, 2024
Pipeline - Excavator - Intro to Pipeline Excavator - Kentucky	Nov 18, 2024 - Nov 23, 2024
Pipeline - Hydro-Excavation	Nov 18, 2024 - Nov 23, 2024
Pipeline - John Henry Rock Drilling - Kentucky	Nov 18, 2024 - Nov 23, 2024

International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

Crane Operations - Level 1 Crane Operations for Beginners	Nov 18, 2024 - Nov 22, 2024
Crosby Rigging - Train the Trainer	Nov 19, 2024 - Nov 22, 2024
Instrumentation and Controls	Dec 1, 2024 - Dec 5, 2024
Welding	Dec 2, 2024 - Dec 6, 2024
Mechanics Training - Hydraulic Fundamentals	Dec 2, 2024 - Dec 6, 2024
Motorgrader Operations	Dec 2, 2024 - Dec 6, 2024
Crane Operations - Intro To Luffing Crawler Crane Operations	Dec 2, 2024 - Dec 6, 2024
Crane Operations - LMI Setup & Crane Operations	Dec 2, 2024 - Dec 6, 2024
Pipeline - Sideboom - Intro to Pipeline Sideboom	Dec 2, 2024 - Dec 7, 2024
Pipeline - Excavator - Intro to pipeline excavator	Dec 2, 2024 - Dec 7, 2024
Pipeline - Excavator procedures for Waterway/Creek Crossings	Dec 2, 2024 - Dec 7, 2024
Pipeline - Angle Dozer - Beginner	Dec 2, 2024 - Dec 7, 2024
Pipeline - Excavator Procedures for Existing Live Pipelines - KENTUCKY	Dec 2, 2024 - Dec 14, 2024
Pipeline - Introduction to Horizontal Directional Drilling	Dec 2, 2024 - Dec 7, 2024
Pipeline - Bending Operations	Dec 2, 2024 - Dec 7, 2024
Pipeline - Hydro Excavation - Advanced	Dec 2, 2024 - Dec 7, 2024
Pipeline - John Henry Rock Drilling - Kentucky	Dec 2, 2024 - Dec 7, 2024
HAZWOPER Train-the-Trainer	Dec 3, 2024 - Dec 10, 2024
Basic Controls and Building Automation Systems	Dec 7, 2024 - Dec 9, 2024
Welding	Dec 9, 2024 - Dec 13, 2024

International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

Blueprint Reading for Stationary Engineers	Dec 9, 2024 - Dec 13, 2024
Mechanics Training - Tier 4 Diesel Engine Air Induction & Emissions Control	Dec 9, 2024 - Dec 13, 2024
Motorgrader Operations	Dec 9, 2024 - Dec 13, 2024
Crane Operations - Level 2 Luffing Crawler Crane Operations	Dec 9, 2024 - Dec 13, 2024
Crane Operations - Practical Testing for NCCCO Certification	Dec 9, 2024 - Dec 13, 2024
Pipeline - Sideboom - Intro to Pipeline Sideboom	Dec 9, 2024 - Dec 14, 2024
Pipeline - Sideboom - Live Draw Works - Kentucky	Dec 9, 2024 - Dec 14, 2024
Pipeline - Excavator - Intro to pipeline excavator	Dec 9, 2024 - Dec 14, 2024
Pipeline - Angle Dozer - Beginner	Dec 9, 2024 - Dec 14, 2024
Pipeline - Excavator - Mat Handling/Bridge Building Training	Dec 9, 2024 - Dec 14, 2024
Pipeline - Introduction to Horizontal Directional Drilling	Dec 9, 2024 - Dec 14, 2024
Pipeline - Bending Operations	Dec 9, 2024 - Dec 14, 2024
Pipeline - Hydro Excavation - Advanced	Dec 9, 2024 - Dec 14, 2024
Pipeline - John Henry Rock Drilling - Kentucky	Dec 9, 2024 - Dec 14, 2024
Crane Operations - All Terrain Crane Set-up & Operations	Dec 9, 2024 - Dec 13, 2024
GPS Rover Training for Leica, Topcon and Trimble	Dec 9, 2024 - Dec 13, 2024
Electrical Troubleshooting & Variable Frequency Drive Operations	Dec 11, 2024 - Dec 14, 2024
Advanced Controls & Building Automation Systems	Dec 14, 2024 - Dec 16, 2024

Training Course Descriptions

CRANE OPERATIONS - ASSEMBLY/DISASSEMBLY OF LUFFING CRAWLER CRANES

Assembly/Disassembly of Luffing Crawler Cranes

This course will take the member through the hands-on step by step procedures to assemble and disassemble a Manitowoc MLC-165 with luffing boom and a Liebherr 1130 with luffing boom. Students will learn the similarities and differences these procedures have to similar cranes. Members will be expected to participate fully in the physical work of assembly and disassembly.

PIPELINE - EXCAVATOR PROCEDURES FOR EXISTING LIVE PIPELINES

Excavation class for Existing Live Pipelines (Maintenance/Rehabilitation work)

This class is a two week course; 12 days total, Monday-Saturday, the class runs 10 hours a day. A typical day will consist of two hours of classroom instruction followed by 8 hours of actual field training. The class will have one instructor and four students.

This class is intended for experienced excavator operators.

This class will prepare the operator for working in the rehabilitation of existing pipelines that are already in service. During the class the following subjects will be covered:

- How to safely probe and pothole for a hotline
- How to dig around existing pipelines using various slope methods required by different gas companies

- How to safely pad and backfill an existing pipeline
- How to safely carry a joint or a section of pipe that has been welded together
- How to dig egresses
- Pipeline terminology
- Safety
- All other various applications of the excavator throughout the rehabilitation process

Prerequisites:

Journeyman operator skills required

TEACHING TECHNIQUES II

OPEN TO INSTRUCTORS

This workshop is designed for IUOE instructors who have completed Teaching Techniques I (Basic). Topics include: Presentation Techniques, Content Design, Assessment, Classroom Management and Engaging and Motivating Learners. Classroom technologies to be covered include PowerPoint.

DRONE TRAINING

This will be a comprehensive look at the use and versatility of Drones on today's construction projects. After completing this course you will be able to prepare for your Commercial Drone Pilot's License Test.

CRANE OPERATIONS - PRACTICAL TESTING FOR NCCCO CERTIFICATION

Practical Testing for NCCCO Certification - Please remember when registering for this course that you should have prior experience in crane operations. The training portion of this course is only an equipment familiarization period on the crane or cranes you would like to be tested on. Members will complete a NCCCO application when the course begins and all candidate testing fees are the responsibility of the candidate.
Practical Testing available on the following cranes

- Lattice Boom Cranes
- Telescopic Boom Cranes—Swing Cab (TLL)
- Telescopic Boom Cranes—Fixed Cab (TSS)
- Tower Crane
- Overhead Crane

PIPELINE - SIDEBOOM - INTRO TO PIPELINE SIDEBOOM

SIDEBOOM - BEGINNER

This class is a one-week course. The course schedule is 10 hours a day, 6 days a week, Monday-Saturday. A typical day will consist classroom training followed by practical field training. This class will consist of 1 instructor and 4 students.

Classes are intended for apprentice operators, although journeyman are also encouraged to apply.

This course will help prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread – Explain in depth each individual crew.
- Sideboom controls.
- How to properly steer the sideboom around obstacles.
- How to catch the load that is being carried.
- How to carry a load using one sideboom..
- The multiple uses of a sideboom through various stages of pipeline construction.
- Pipeline terminology and vocabulary
- Safety

PIPELINE - EXCAVATOR - INTRO TO PIPELINE EXCAVATOR

EXCAVATOR – BEGINNER TRAINING

This class is a one week course. The course schedule is 10 hours a day, 6 days a week, Monday-Saturday. A typical class will consist of 1 day of classroom training followed by 5 days of practical field training.

Classes are intended for less experienced operators, **oilers** and **apprentices** are encouraged to apply.

This course will introduce you to the excavator techniques utilized in the pipeline industry. The following subjects will be covered with emphasize on the Sloped Ditching Technique.

- A pipeline spread – Explain in depth each individual crew
- All the various applications of an excavator throughout the many different stages of construction
- Students will be introduced to the excavator, go over the fundamentals of the machine
- An exhibition course will be set-up, students will test there ability by carrying weights through this course while operating the travel of the machine
- How to dig a pipeline sloped ditch.
- Students will learn how to build water-breakers with an excavator.
- Understanding the pipeline terminology and vocabulary words.
- Safety

PIPELINE - ANGLE DOZER - BEGINNER

ANGLE DOZER - BEGINNER

This class is a one week course. The course schedule is 10 hours a day, 6 days a week, Monday-Saturday. A typical day will consist of 10 hours of practical field training.

Classes are intended for inexperienced operators, although **apprentices** are encouraged to apply.

This course will prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread – Explain in each individual crew.
- How to properly topsoil a pipeline Right-of-way.
- How to make a side hill cut in a pipeline Right-of-way.
- All the various applications of an angle dozer throughout the many different stages of the pipeline construction process.
- The angle blade, understanding the concept of why the material on a pipeline right of way is moved at 90 degrees, using the long and short corners of the blade.
- Understanding the pipeline terminology and vocabulary words.
- Safety.

PIPELINE - INTRODUCTION TO HORIZONTAL DIRECTIONAL

DRILLING

This a one week course consisting of 6 days total, Monday - Saturday. The course will run 10 hours a day consisting of a mix of classroom and field training. No Prior drill experience is required. Apprentices and Journeyman are encouraged to apply. Members from all industry backgrounds are also encouraged to apply.

During the class, the operator will be introduced to the HDD machine and the following subjects will be covered:

- Introduction to the DitchWitch JT-40 HDD system
- Introduction to the Falcon F-5 locating system along with subsite marksman+
- Introduction to the latest GPS versions
- The basic functions of the drill will be covered
- Safety
- Vocabulary

THERMOGRAPHY & VIBRATION ANALYSIS

Two important tools of our trade will be covered in detail. Get hands on training using the latest Fluke Thermal Imagers for testing and troubleshooting. Thermal imagers give engineers insights into how equipment is actually running and can identify problems before component failure occurs. The vibration analysis portion gives students hands on training to test the alignment and vibration of pumps and motors. Plant tours and hookups to actual plant equipment is also provided.

INDOOR AIR QUALITY

This course covers the vast issues of IAQ in commercial buildings and how to handle the everyday problems, how to prevent and solve IAQ problems effectively, how to work with building management and owners in developing an IAQ maintenance and tracking program, and explains

the latest IAQ concerns such as airborn contaigens, mold, and radon mitigation.

COOLING TOWER OPERATION & MAINTENANCE

This seminar is focused on the care of evaporative cooling equipment. The course provides useful information about how to operate equipment for optimal performance and reliability. Students will learn the design of cooling towers. It covers water quality, water flow balance, water quantity, fill condition, fan systems, and overall maintenance.

WELDING

Courses will teach the student how to weld in all positions using different welding processes.

EXCAVATION OPERATIONS

Excavation Operations – The IUOE Training and Education Center will be offering the Excavation Operations course for Operators with skill levels of beginner through advanced. This 40-hour course will include classroom instruction and hands-on training. Classroom instruction topics will include machine safety, working around utilities and OSHA regulations that apply to trenching/excavation activities. Hands-on will consist of machine control familiarization, benching and sloping techniques, slot dozing and backfill operations. Upon competition of this course, the member will understand trench safety techniques and how to move dirt efficiently.

ELECTRICAL SYSTEMS 2

This class builds off of Electrical Systems 1 so students should have taken that before this class or have comparable experience and understanding.

In this class, students will be provided a greater understanding of electrical principles and theory including series and parallel circuits and more advanced electric formulas. Students will gain the ability to read electrical prints, replace breakers, and perform troubleshooting using Fluke meters. This course includes substantial hands-on activities.

MECHANICS TRAINING - ELECTRONIC FUNDAMENTALS

Mechanics Training - Electronic Fundamentals

This course will give the student a strong foundation in 12 and 24 volt electrical systems used in mobile equipment. Upon completion, participants will be able to:

- Understand the electron flow in a circuit and how it relates to circuit troubleshooting.
- Identify and troubleshot series, parallel, and series-parallel circuits.
- Demonstrate the use of a DVOM for troubleshooting electrical circuits.
- Identify and read the schematic symbols in a typical electrical schematic.
- Troubleshot using a diagnostic code and understand how the code is generated.

The learning environment will be established in both the classroom and the service shop.

PIPELINE - TRENCH BOX TRAINING

This is a one week specialized class, the class will run 6 days/week, 10 hours a day. This class is intended for experienced/profient excavator operators.

In this course the operator will learn the following:

1. Proper procedures to assemble and disassemble a trench box

2. Proper procedures to carry a trench box in the pipeline industry

3. Different scenarios that a trench box is used for in the pipeline industry

4. Proper excavation procedures for the installation of a trench box

5. Proper backfill procedures for the installation of a trench box

6. Proper removal process for a trench box

This class will consist of field training with very little classroom time.

CRANE OPERATIONS - PRACTICAL TESTING FOR NCCCO CERTIFICATION - TELEHANDLER ONLY

Practical Testing for NCCCO Certification for Telehandler ONLY - Please remember when registering for this course that you should have prior experience in **Telehandler Operations.** The training portion of this course is only an **equipment familiarization** period on the **Telehandler** you will be tested on. All NCCCO testing fees are the responsibility of the candidate and test registration will be completed on the first day of testing.

ELECTRICAL TROUBLESHOOTING & VARIABLE FREQUENCY DRIVE OPERATIONS

This four-day seminar is designed to provide the knowledge and skills required when selecting, installing, testing and troubleshooting electrical systems the motors they control, and the control circuits connected to them. In this hands-on seminar, students will build, program and test VFD, motors and control circuits.

Test instruments covered and used include digital multi-meters (DMMs), current clamps and meter attachments. Topics, circuits, and equipment covered include:

• Test instrument terminology, symbols and measurement functions for each type of instrument used is covered to learn what test instruments should and should not be used circuits.

• Learn the safe and correct way to take electrical measurements and what the measurements actually mean.

.• Learn where and how to use special meter functions like MIN/MAX, RELATIVE, LoZ, Peak, kVA, kW, and PF measurement functions.

• Learn how to test for grounding problems.

• Understanding VFD and motor nameplate data.

• Learn how to test and wire any three-phase motor without using the motors wiring diagram and what the expected readings should be before power is applied and how to troubleshoot the motor after power is applied.

• Circuits built include using, magnetic motor starters, mechanical and solid-state switches, such as, selector switches, proximity switches, photoelectric switches, analog inputs (photovoltaic and potentiometers), and other commonly used electrical devices.

• Connect, program, and test VFDs (variable frequency drives).

• Take power measurements (P.F., kVA, kW, and harmonic) to understand power quality problems.

BOILER OPERATIONS 1

The Boiler Operation 1 course is an introductory course that will provide stationary engineers and maintenance personnel a foundational understanding of boilers, steam and heating. Students will learn how boiler systems work, gain an understanding of boiler safety and learn about various boiler fittings and accessories. Upon completing the class, students will understand basic heat and steam principles, and know how to safely perform an inspection of an operating boiler.

AUTOMATED LIGHTING CONTROLS BY LUTRON ELECTRONICS

For Stationary engineers who wish to gain a better understanding of networked lighting control systems along with how to maintain and troubleshoot them.

Lutron's founder, Joel Spira, invented the first solid state electronic dimmer in 1959. Fast forward to the present day and the world of lighting controls has greatly advanced. In this class you will learn about the most popular commercial Lutron systems installed over the past decade. These products are found in hundreds of thousands of buildings across North America and the world. Commercial lighting systems will often fall under the purview of facilities management so a firm understanding of their maintenance ensures that the lighting system runs as smoothly as the rest of the building.

The duration of this course will be two days. It will act as a knowledge primer for the variety of commercial legacy Lutron systems a stationary engineer may find. We will also introduce the future of Lutron lighting controls and our newest commercial system.

Detailed topics will include:

- Online prerequisite learning plan introducing dimming technology and the Lutron story
- Instructor-led presentations relating to legacy Grafik Eye QS, Energi Savr Node, and panels
- Overview of Lutron's Vive and Quantum systems
- How to control the Quantum Vue Facilities Management software and use it in troubleshooting
- Work on a live Quantum system test wall, program and introduce faults in real-time
- Introduction to Lutron's newest cloud-connected solution, Athena
- Best Practices for Asset Management and Planning
- Update on Fluorescent to LED retrofit kits
- Tour of IUOE's Quantum Lighting Control System and software

CRANE OPERATIONS - CRANE STANDARDS TRAINING AND LOAD CHART REVIEW FOR WRITTEN EXAM – MOBILE CRANES

Crane Operations – Crane Standards Training and Load Chart Review for Written Exam – Mobile Cranes - This course will include standards from OSHA 1926.1400 and ASME B30.6, load chart and range diagram review.

PIPELINE - EXCAVATOR PROCEDURES FOR ROAD BORE APPROACHES

This is a one week course, 6 days, Monday - Saturday, 10 hours a day.

The operators who attend this class will cover the following subjects:

- How to properly excavate cradle bore approaches.
- How to properly excavate track bore approaches.
- How to properly excavate the coming out side of the bore.
- How to properly excavate the working side of the bore area.
- How to properly utilize mats in the bore application.
- How to properly relay dirt utilizing 2 or more excavators.

MOTORGRADER OPERATIONS

This course will focus on upgrading the skills for the Operating Engineer on Motorgrader operations.

OSHA 510 SAFETY & HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY

OPEN TO IUOE INSTRUCTORS ONLY

This course covers OSHA policies, procedures, and standards, as well as construction safety and health principles. Topics include scope and application of the OSHA construction standards. Special emphasis is placed on those areas that are the most hazardous,using OSHA standards as a guide. Completion of this class is required prior to taking the OSHA 500 class.

MECHANICS TRAINING - INTRO TO MOBILE AIR

CONDITIONING SYSTEMS / 609 MACS CERTIFICATION

Mechanics Training - Intro to Mobile Air Conditioning Systems / 609 MACS Certification - This is a 3 Day (24-Hour) course designed to train a person to properly service mobile air conditioning systems as well as provide each person taking the course the opportunity to become certified to legally perform mobile air conditioning service work. At the present time, the certification is effective for a person's lifetime.

Topics Covered Include:

A. Refrigerant types and behavior
B. Physical principles relating to air conditioning
C. Heating system design and repair
D. Refrigeration components
E. Refrigerant control systems
F. Refrigerant identification
G. Performance testing an air conditioning system
H. Leak detecting
I. Recovering refrigerant
J. Recycling refrigerant
K. Evacuating a system
L. Flushing a system
M. Component replacement
N. Adding lubricant
O. Charging the system
P. Environmental concerns relating to mobile air conditioning systems

Considerable class time will be devoted to hands-on practice of required service skills.

Member is responsible for MACS Section 609 Certification fee. Testing fee of $26.50 will be due after testing is complete, payments methods include personal check or credit card.

PIPELINE - ONLINE OILER TRAINING

This is an online class only. The class will take approx. 8 hours to complete, you will be able to complete the class at your own pace, meaning you can log in and out as needed to complete the course.

This class is intended for anyone who wants to work as an oiler in the pipeline industry. It is also intended for operators who have never worked in the pipeline industry.

Topics discussed and included in the course:

- Work Environment
- Duties of a Pipeline Oiler
- Nomenclature
- Work Ethic
- Vocabulary Games and review
- Final Exam
- Final Vocabulary Exam

The member will receive a certificate of completion at the end of the course.

HVAC TROUBLESHOOTING & ROOFTOP UNIT MAINTENANCE

Light commercial Rooftop units are the topic of this class.. There will be extensive hands-on training for maintenance and service engineers who have had basic air conditioning training and hold the EPA Universal Certification. The focus will be on identifying various components of RTU’s , charging practices , troubleshooting , repair, and maintenance.

BASIC CONTROLS AND BUILDING AUTOMATION SYSTEMS

BASIC CONTROLS& BUILDING AUTOMATION SYSTEMS

This course has been developed for individuals who want to take the mystery out of the understanding of how DDC controls and Building Automation Systems operate, and also the insight of the various related software packages that drive these systems and how they manipulate these systems.

This seminar has also been designed for people not familiar DDC controls and Building Automation Systems. There will be lectures on basic control strategies, the basics of DDC hardware, and also the basic understanding of building optimization for curtailing the use of energy.

For the experienced people there will be discussions on advanced control technologies dealing with the architecture of Building Automation Systems, discussing how they are installed, wired, and then programmed. Also, there will be main topic lectures on DDC Main Controllers, Stand alone controllers, and there communication protocols.

After the completion of this seminar the participants will be able to:

- Understand the basic DDC and Analog control technology for the HVAC field
- Describe the different types of control actions and when to use them
- Identify Building Automation System main components and where they are used
- Define and select the proper Automation System for different locations
- Ascertain how Building Automation Systems Operate to maintain human comfort
- Define the different types of Analog and Binary inputs and outputs
- Understand the system wiring though various schematic diagrams of installed systems
- Comprehend the different type of operator interfaces and how they communicate
- Define criteria for control strategies such as with closed loop control
- Describe control strategies and how buildings are optimized for peak efficiency
- Understand how a PID loop is written and how to tweak it in for the maximum performance
- Define the different types of programming method

International Union of Operating Engineers

AFFILIATED WITH THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Training Course Schedule

OSHA 500 TRAINER COURSE CONSTRUCTION INDUSTRY

OPEN TO IUOE INSTRUCTORS ONLY

AUTHORIZES INSTRUCTOR TO TEACH: 10- and 30-Hour Construction Industry Outreach courses.

LOW PRESSURE BOILER OPERATIONS

Low Pressure Boiler Operations course will help to assist in preparing the Stationary Engineer for the proper operation of Low-Pressure boilers and will also help with preparing for the facility operating engineer licensing. This course provides a comprehensive overview of the latest information on the safe and efficient operation of low-pressure steam and hot water boilers, cooling systems, and related equipment. The course is divided into sections to aid comprehension of key concepts:

- Boiler Operation Principles
- Steam Boiler Fittings
- Steam Boiler Feedwater Systems
- Steam Systems
- Fuel Systems
- Draft Systems
- Boiler Water Treatment
- Boiler Operation Procedures
- Hot Water Boilers and Fittings
- Hot Water Boiler Accessories and Piping Systems

- Cooling Systems
- Boiler Operation Safety
- Boiler Operator Licensing

TESTING & BALANCING FOR AIR & HYDRONIC SYSTEMS

HVAC system efficiency and human comfort are all affected by proper system airflow requirements. Testing, Adjusting, and Balancing (TAB) of an HVAC system is a useful process of measuring and regulating the amount of airflow at each area of the building. Balancing is essential for any HVAC system to perform as per building design and expectations. It is an overall health check for your HVAC system and helps to ensure that you are providing the building occupants with a comfortably conditioned space at the lowest energy cost possible.

A well-balanced system will ensure the right amounts of air are delivered to the right places, at the right temperature, and humidity levels with the least amount of distribution losses. It is important that the air distribution system and duct designs are designed and installed in such a way that the balancing and the measuring of airflow are possible and can be performed accurately.

This course will discuss why balancing an HVAC system is so important, why systems become unbalanced, what the balancing process entails and more. This course will help the student understand the TAB process and interpret the ventilation/balance report information and the process for conducting total system balancing, from start to finish, for basic air systems, hydronic systems, and domestic hot water systems found in commercial buildings. Course topics include document review & preparation for TAB (of air & water systems), site observations, testing for constant & variable air & water system flow rates.

CRANE OPERATIONS - INTRO TO LUFFING CRAWLER CRANE OPERATIONS

Intro to Luffing Crawler Crane Operations - This course is for students with previous crane experience. The course will introduce operators to the procedures for raising and lowering luffing boom systems as well as their operation. It will cover what critical boom-to-luff angles are and where to find them. It will also cover how luffer charts differ from other charts.

CRANE OPERATIONS - ALL TERRAIN CRANE SET-UP &

OPERATIONS

All Terrain Crane Set-up & Operations - During this one week course, the student will be entered into a crane yard rental scenario. They will learn safe driving habits along with maneuvering the crane with and without the boom dolly. They will install the counter weights, set-up and configure the crane in the scenario described by the instructor as if on a job site and then perform the scheduled task.

PIPELINE - SIDEBOOM - HYDRAULIC CONTROLS

SIDEBOOM – INTERMEDIATE TRAINING

This class is a three week course. The course schedule is 10 hours a day, 6 days a week, Monday - Saturday. A typical day will consist of 2 hours of classroom training followed by 8 hours of practical field training.

Classes are intended for experienced operators, although apprentices with journeyman level skills are encouraged to apply. A proficiency test will be given at the beginning of the course.

This course will prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread – Explain in depth each individual crew
- Sideboom controls
- How to properly steer the sideboom around obstacles while carrying a section of pipe
- How to catch the load that is being carried
- How to carry a load using one sideboom or multiple machines
- How to correctly carry a joint of pipe with the aid of a swamper
- The multiple uses of a sideboom through various stages of pipeline construction
- Pipeline terminology and vocabulary
- Safety

PIPELINE - EXCAVATOR - INTRO TO PIPELINE EXCAVATOR - KENTUCKY

EXCAVATOR – BEGINNER TRAINING

This class is a one week course. The course schedule is 10 hours a day, 6 days a week, Monday-Saturday. A typical class will consist of 1 day of classroom training followed by 5 days of practical field training.

Classes are intended for less experienced operators, **oilers** and **apprentices** are encouraged to apply.

This course will introduce you to the excavator techniques utilized in the pipeline industry. The following subjects will be covered with emphasize on the Sloped Ditching Technique.

- A pipeline spread – Explain in depth each individual crew
- All the various applications of an excavator throughout the many different stages of construction
- Students will be introduced to the excavator, go over the fundamentals of the machine

- An exhibition course will be set-up, students will test there ability by carrying weights through this course while operating the travel of the machine
- How to dig a pipeline sloped ditch.
- Students will learn how to build water-breakers with an excavator.
- Understanding the pipeline terminology and vocabulary words.
- Safety

PIPELINE - EXCAVATOR - INTERMEDIATE

EXCAVATOR – INTERMEDIATE TRAINING

This class is a three week course. The course schedule is 10 hours a day, 6 days a week, MondaySaturday. A typical day will consist of 2 hours of classroom training followed by 8 hours of practical field training.

Classes are intended for experienced operators, although apprentices with journeyman level skills are encouraged to apply. A proficiency test will be given at the beginning of the course.

This course will prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread – Explain in depth each individual crew
- All the various applications of an excavator throughout the many different stages of construction
- How to dig a pipeline sloped ditch
- How to dig the point of intersections
- How to dig safe bell holes
- How to properly plug out
- How to dig road bore approaches and creek crossings

- How to dig for a box sag
- Understanding the pipeline terminology and vocabulary words
- Safety

PIPELINE - ANGLE DOZER - INTERMEDIATE

ANGLE DOZER - INTERMEDIATE

This class is a three week course. The course schedule is 10 hours a day, 6 days a week, Monday - Saturday. A typical day will consist of 2 hours of classroom training followed by 8 hours of practical field training.

Classes are intended for experienced operators, although apprentices with journeyman level skills are encouraged to apply. A proficiency test will be given at the beginning of the course.

This course will prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread – Explain in depth each individual crew
- How to build different types of pipeline Right-of-way
- How to properly topsoil a pipeline Right-of-way
- How to make a two-tone pipeline Right-of-way
- How to make a side hill cut in a pipeline Right-of-way
- All the various applications of an angle dozer throughout the many different stages of the pipeline construction process
- The angle blade, understanding the concept of why the material on a pipeline right of way is moved at 90 degrees, using the long and short corners of the blade
- Understanding the pipeline terminology and vocabulary words

- Safety

PIPELINE - HORIZONTAL DIRECTIONAL DRILLING WITH MUD RECLAMATION SYSTEM

HORIZONTAL DIRECTIONAL DRILLING WITH THE MUD RECLAMATION SYSTEM

This class is a three week course. The course schedule is 10 hours a day, 6 days a week, Monday-Saturday. A typical day will consist of 2 hours of classroom training followed by 8 hours of practical field training.

This class will start with the basic operation of the HDD machine first, as the class progresses, the operator will be challenged to operate the HDD in more complex scenarios all while incorporating the use of the Vermeer 250C mud reclamation system.

This course will prepare you for the HDD operations in the pipeline industry and the utility industry. The following subjects will be covered:

- How to drill various materials using different accessories
- Applications of the HDD machine in pipeline construction and in the utility industry.
- The different procedures of mixing chemicals for the mud tech position.
- How to use the F-5 Falcon locating instrument that tracks the drill stem.
- How to Log Bore while drilling.
- How to use the Kemtron 600X reclaimer system in conjunction with the drilling machine.
- How to use and understand different drilling profiles either by hand or the program itself.
- Explain how to understand clearance problems.
- How to use the Vermeer projects software system including all GPS components.
- How to send edit/send an LWD to a contractor successfully.
- Proper maintenance of an HDD machine.
- Terminology
- Safety

PIPELINE - HYDRO-EXCAVATION

HYDRO-EXCAVATION CLASS

This class is one week in length; six days total, Monday – Saturday, the class runs 10 hours a day. The class will consist of one instructor and four students.

As the pipeline industry evolves, hydro-excavation is becoming one of the most popular way among gas companies to pothole/locate and excavate their existing hotlines. Hydro-excavation is considered one of the safest and most efficient ways to excavate and locate pipelines. As the demand for these machines rise in the industry, so will the demand for the skilled operators to operate them. This is a highly recommended course. This class is no longer utilizing a Morooka mounted unit, the class has been upgraded to an actual Hydrovac Truck.

In this class the operator shall learn:

- The basic controls of a Vermeer VTX300 Hydro-vac Truck.
- The fundamentals for locating pipelines.
- How to locate a pipeline without damaging the protective coating.
- How to excavate a pipeline without damaging the protective coating
- Learn different trenching techniques.
- Learn the different nozzle selection
- Environmental concerns
- Maintenance
- Safety
- Terminology

MECHANICS TRAINING - INTRO TO DIESEL LAPTOPS &

DIAGNOSTIC SOFTWARE

Mechanics Training - Introduction to Diesel Laptops and Diagnostic Software - In this course, members will be given an introduction to the diesel laptops diagnostic software and hardware, along with applications of these tools.

Topics will include:

- Introduction to the TEXA software
- Aftertreatment
- Electrical 1
- Electrical 2
- Data bus Diagnostics

GPS MACHINE CONTROL TRAINING

GPS Machine Control - This course will cover the three Major GPS machine control systems; Topcon , Trimble , and Leica. The majority of class time will be spent in the field, where members will be given the option to use the GPS brand of their choice. Indoor class time including any rainy days will be spent going over every aspect of the different software systems via PC Simulators. Members wishing to focus on one GPS system are free to do so (pending availability). Members wanting an overview of all three systems will have that option as well.

PIPELINE - EXCAVATOR - PIPE HANDLING

This is a one week course. The course will be 6 days in length, Monday - Saturday consisting of 10 hours a day of field training. Apprentices and Journeyman are encouraged to apply. A proficiency test will be given at the beginning of the class.

During the class, the operator will be challenged with different tasks utilizing pipe joints and sections.

- carrying single joints and/or sections

- How to properly set pipe into the clamps
- How to properly skid pipe joints or sections
- How to properly carry pipe joints or sections underneath powerlines
- Work with multiple excavators handling pipe sections
- How to properly carry sections containing sags or sidebends
- How to properly help rig up a sideboom

GENERATOR MAINTENANCE & OPERATION

This class is intended for Apprentice through Mid-level journeyman. It covers for both “theory and practical” knowledge on diesel generator operation.

The seminar will have three primary categories:

1) Diesel generator maintenance and operation

2) Safety with emphasis on OSHA standards, Title 29 1910 & 1926 Code of Federal Regulations

3) Basic electrical knowledge as per National Electrical Code guidelines Students will have hands on time with a diesel generator package.

ADVANCED CONTROLS & BUILDING AUTOMATION SYSTEMS

ADVANCED CONTROLS &
BUILDING AUTOMATION SYSTEMS

Prerequisite: Students should have taken Basic Controls and Building Automation Systems or have similar work experience

This advanced course has been developed for individuals who want to develop the understanding of how DDC controls and Building Automation Systems are installed, wired, operated, and programmed, also included is the insight of the various related software packages, that drive and manipulate these systems.
We will discuss and demonstrate advanced control technologies dealing with the architecture of various manufactures of Building Automation Systems. We will demonstrate how they are installed, wired, and then programmed. Also, there will be main topic lectures on BAS Supervisory Controllers, Standalone controllers, and their communication protocols.
There will also be lectures on advanced control strategies and the understanding of building optimization for curtailing the use of energy.
After the completion of this course the participants will be able to:

- Describe the different types of control actions and when to use them
- Identify Building Automation System main components and where their used
- Define and select the proper Automation System for various locations
- Define the different types of Analog and Binary inputs and outputs
- Understand system wiring through various schematic diagrams of installed systems
- Wire Building Automation System main components
- Understand the various types of BAS communication protocols
- Program various type of industry controllers
- Comprehend the different types of operator interfaces and how they communicate
- Describe control strategies and how buildings are optimized for peak efficiency
- Define the different types of programming graphic methods

40?HOUR HAZWOPER

Required for workers that perform activities that expose or potentially expose them to hazardous substances. 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 and OSHA regulations. This course covers topics included in 29 CFR 1910.120.

CRANE OPERATIONS - LEVEL 2 LUFFING CRAWLER

CRANE OPERATIONS

Level 2 Luffing Crawler Crane Operations - This course is available to members that have successfully completed an Intro to Luffing Crawler Cranes Operations course at ITEC.

Prerequisites: Member must also be certified/licensed for mobile hydraulic and/or lattice cranes. Certifications/Licenses include OECP, NCCCO, Red Seal.

CRANE OPERATIONS - LEVEL 1 CRANE OPERATIONS FOR BEGINNERS

Crane Operations for Beginners (Level 1) - In this class students will be taught the requirements for crane inspection, the basics of crane set up including LMI's and LML's. This portion of the class has a hands-on approach. The largest portion of the class will be actual seat time instruction in the "How To" operate a crane safely and build on basic skills necessary to lift loads.

PIPELINE - ANGLE DOZER - BEGINNER - KENTUCKY

ANGLE DOZER - BEGINNER

This class is a one week course. The course schedule is 10 hours a day, 6 days a week, Monday-Saturday. A typical day will consist of 10 hours of practical field training.

Classes are intended for inexperienced operators, although **apprentices** are encouraged to apply.

This course will prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread – Explain in each individual crew.
- How to properly topsoil a pipeline Right-of-way.
- How to make a side hill cut in a pipeline Right-of-way.
- All the various applications of an angle dozer throughout the many different stages of the pipeline construction process.
- The angle blade, understanding the concept of why the material on a pipeline right of way is moved at 90 degrees, using the long and short corners of the blade.
- Understanding the pipeline terminology and vocabulary words.
- Safety.

PIPELINE - JOHN HENRY ROCK DRILLING - KENTUCKY

This class is one week in length; six days total, Monday - Saturday, the class runs 10 hours a day consisting of 2 hours classroom followed by 8 hours of practical field training. The class will have one instructor and 4 students per class.

Classes are intended for experienced excavator operators. A proficiency test will be given at the beginning of the course to verify abilities.

This course will prepare you for rock drilling operations in the pipeline industry. The following subjects will be covered:

- All the various applications of the John Henry machine.
- How to perform machine set-up, how to drill through rock, overburden, and how to "double-steal".
- Maintenance of the machine.
- Safety

TRACTOR LOADER-BACKHOE OPERATIONS

The IUOE Training & Education Center will be offering classes in all areas of TLB operation from beginner through advanced.

Topics covered:

- Trenching
- Benching
- Sloping
- Trench Box Work
- Backfilling
- Layout.

GPS OVERVIEW - INTRODUCTION TO GPS

GPS Overview (Introduction to GPS) - This course will cover the basics of Rover, Machine Control, CAD software (Trimble Business Center) and Drone processing. Members will learn a basic overview of GPS from the building of a simple model in CAD, to the staking, to the infield building with Machine Control.
All Levels of experience are invited. There will be something for everyone, whether you're seeing GPS concepts for the first time or come with years of experience and just want to sharpen your skills.

SOLAR PANEL INSTALLATION MAINTENANCE & TROUBLESHOOTING

This course work will include information on site location, system sizing, mounting options, system components, configurations, mechanical, electrical integration and code requirements. Topics also include Solar Radiation, System Components, Cells, Modules, and Arrays, Batteries, Inverters, System Sizing, Mechanical Integration, Electrical Integration, Utility Interconnection, Permitting and Inspection, Commissioning, Maintenance, and Troubleshooting. Students will receive hands on training in installation and configuration of actual solar voltaic systems.

PUMP MAINTENANCE & OPERATION

Successful and efficient operations and maintenance of any mechanical system can only be accomplished with a clear understanding of the components making up the mechanical system and how they interact. Stationary engineers are responsible for the operations and maintenance of the Chilled Water, Condenser Water and Hot Water systems to just name a few. The heart of each of these is the pump.

In this four-day course students will become familiar with different types of pumps, their operating principles, how to diagnose and troubleshoot issues, and their proper maintenance and repair procedures. Focus is on hands on activities.

ELECTRICAL SYSTEMS 1

Electricity is a fundamental part of most tasks that the stationary engineer performs. Whether one works with motors, chillers, boilers, air handlers, lighting, or controls, electricity plays a part of each. This course equips the stationary engineer with knowledge of electrical principals, electrical safety, how to perform electrical calculations, and gives an understanding of both AC and DC electrical components. Students have the opportunity to also perform hands on activities to reinforce the coursework.

This course is a suggested pre-requisite for Electrical Systems 2 course.

MECHANICS TRAINING - DIESEL ENGINE FUNDAMENTALS

Mechanics Training – Diesel Engine Fundamentals

This course will give the student a strong foundation in Diesel engine fuel injection systems. Upon completion, participants will be able to:

- Identify and describe the purpose, functions, properties, and characteristics of diesel fuel injection systems.
- Identify and explain procedures for inspection, servicing, testing, and diagnosing problems associated with low-pressure and high-pressure fuel systems.
- Identify and describe the types, styles, and applications of mechanical and electronic governors.
- Identify and describe the operating principles of electronic signal processing systems used in electrical system control on modern diesel engines.

The learning environment will be established in both the classroom and the service shop.

CRANE OPERATIONS – TOWER CRANE STANDARDS TRAINING & LOAD CHART REVIEW / NCCCO PRACTICAL TESTING FOR TOWER CRANE CERTIFICATION

Crane Operations – Tower Crane Standards Training & Load Chart Review / NCCCO Practical Testing for Tower Crane Certification - This course will include standards from OSHA 1926.1435 and ASME B30.3, load chart and range diagram review.

Please remember when registering for this course that you should have prior experience in crane operations. The training portion of this course is only an equipment familiarization period on the crane or cranes you would like to be tested on. Members will complete a NCCCO application when the course begins and all candidate testing fees are the responsibility of the candidate.

Practical Testing available for Tower Crane only.

Members must bring PPE to include hardhat, boots, gloves, safety vest and safety glasses to training.

CROSBY RIGGING - TRAIN THE TRAINER

Crosby Rigging - Train the Trainer - Course is available to IUOE Instructors only

Day 1

- Risk Management
- Load Control
- Rigging Triangle
- Application of Hardware
- Inspection of Hardware

Day 2

- Truck Demos
- Application of Slings
- Inspection of Slings
- Block Concepts
- Lifting Clamps
- Technology Solutions
- Straight Point
- BLOKCAM

Day 3

- Rigging Tools Workshop
- Math Review
- Math Workshop
- Heavy Lift
- Planning The Lift
- Heavy Lift Considerations
- Heavy Lift Shackles
- Heavy Lift Hooks
- Terminations

Day 4

- Heavy Lift
- Application of Heavy Lift Blocks

- Blocks and Heavy Lift
- Sheaves and Snatch Blocks for Heavy Lift
- The Rigging Triangle in Heavy Lift Workshop

INSTRUMENTATION AND CONTROLS

Instrumentation and Controls is an introductory course covering basic skills and concepts used in the field. The curriculum will provide students with a solid foundation for various industrial applications and process operations in various stationary facilities. The course will cover instrumentation principles including pressure, flow, level and temperature, as well as safety and tools of the trade. Students will become familiar with control valves and controllers, and learn various control schemes which include transmitter calibration and system troubleshooting.

MECHANICS TRAINING - HYDRAULIC FUNDAMENTALS

Mechanics Training - Hydraulic Fundamentals

This course will give the student a strong foundation in hydraulic systems used in mobile equipment. Upon completion, participants will be able to:

- Describe the principles of hydraulics.
- Identify and describe the function of the components that make up a typical hydraulic system.
- Identify and read the schematic symbols in a typical hydraulic schematic.
- Understand the use and operation of load sensing variable displacement pumps.

The learning environment will be established in both the classroom and the service shop.

CRANE OPERATIONS - LMI SETUP & CRANE OPERATIONS

LMI Set-up & Crane Operations (Level 1) - This course is an entry level course on the set up and operations of a mobile crane. This course has classroom and hands-on exercises that cover basic crane knowledge, load charts, daily inspection, LMI set-up, outrigger and jib set-up for a variety of cranes.

Prerequisites for Level 1 – Member must have completed ITEC Level 1 Crane Operations course or be certified/licensed for hydraulic and/or lattice boom cranes. Certifications/licenses include NCCCO, OECP, Red Seal, Connecticut or New York State license.

PIPELINE - EXCAVATOR PROCEDURES FOR WATERWAY/CREEK CROSSINGS

This is a one week course, 6 days, Monday - Saturday. 10 hours of training each day.

In this course operators will cover the following:

- Learn the proper excavation techniques of box sags.
- Learn the proper excavation techniques of sweeping sags.
- Learn how to properly open cut a creek/waterway utilizing a flume pipe.
- Learn how to properly thread a section of pipe under a flume pipe and lay the section in the waterway/creek.
- Learn how to properly backfill a creek/waterway.
- Learn how to carry a box sag and a sweeping sag.
- Learn how to properly relay dirt utilizing 2 or more excavators.

PIPELINE - EXCAVATOR PROCEDURES FOR EXISTING LIVE PIPELINES - KENTUCKY

Excavation class for Existing Live Pipelines (Maintenance/Rehabilitation work)

This class is a two week course; 12 days total, Monday-Saturday, the class runs 10 hours a day. A typical day will consist of two hours of classroom instruction followed by 8 hours of actual field training. The class will have one instructor and four students.

This class is intended for experienced excavator operators.

This class will prepare the operator for working in the rehabilitation of existing pipelines that are already in service. During the class the following subjects will be covered:

- How to safely probe and pothole for a hotline
- How to dig around existing pipelines using various slope methods required by different gas companies
- How to safely pad and backfill an existing pipeline
- How to safely carry a joint or a section of pipe that has been welded together
- How to dig egresses
- Pipeline terminology
- Safety
- All other various applications of the excavator throughout the rehabilitation process

PIPELINE - BENDING OPERATIONS

BENDING OPERATIONS CLASS

This class is one week in length; six days total, Monday-Saturday, the class runs 10 hours a day. This class will consist of one instructor and 5 students.

Classes are intended for members with mathematical skills. This course will prepare you for working in the pipe bending operations of a pipeline project. The member needs to be prepared to

learn a vast amount of knowledge in one week.

Classroom instruction involves mathematical formulas.

The Operations of this class will consist of the following:

- Calculating the circumference of a given diameter of pipe.
- Calculating simple bends.
- Calculating multiple bends in a single joint of pipe.
- Calculating Max degree of pull
- Establishing pin up mark
- Set-up and operation of mandrel " dependent on mandrel availability"

Students will have hands-on training in the operation of the bending machine and will have an opportunity to bend a joint of pipe. There is also hands on instruction in the use of digital protractors, scientific calculators, seam charts and pipe markings.

Also discussed are the enormous safety concerns that go along with bending pipe.

PIPELINE - HYDRO EXCAVATION - ADVANCED

ADVANCED HYDRO-EXCAVATION CLASS

This class is one week in length; six days total, Monday – Saturday, the class runs 10 hours a day. The class will consist of one instructor and four students.

As the pipeline industry evolves, hydro-excavation is becoming one of the most popular way among gas companies to pothole/locate and excavate their existing hotlines. Hydro-excavation is considered one of the safest and most efficient ways to excavate and locate pipelines. As the demand for these machines rise in the industry, so will the demand for the skilled operators to operate them. This is a highly recommended course.

In this class the operator will have the opportunity to utilize the Hydro-excavation machine to locate underground utilities. In addition, we will be working inside a existing mock pipeline station to expose the underground utilities, digging a bell hole around the utilities, etc. This class is delivering/preparing operators for the future as this type of work continues to explode for the Operating Engineers.

HAZWOPER TRAIN-THE-TRAINER

OPEN TO INSTRUCTORS

AUTHORIZES INSTRUCTOR TO TEACH: HAZWOPER – 16, 24 and 40-Hour, 8-Hour Refresher, 8-Hour Supervisor, and other applicable courses.

Covers HAZWOPER standards, teaching techniques, industrial hygiene and toxicology, hazard communication (includes GHS), respirators and respiratory protection, personal protective equipment, instrumentation and monitoring, confined space, medical monitoring, radiation, heat/cold stress, emergency response, decontamination, work zones, drum handling, and posttest.

BLUEPRINT READING FOR STATIONARY ENGINEERS

Students will be exposed to various subjects related to blueprint reading, such as blueprints, construction materials, construction methods, specifications, branding, and quantity takeoff. Students will spend approximately 70% of classroom time with hands-on labs utilizing a variety of the prints and specifications that are most often used as reference and guidance for the Stationary Engineer. Specific emphasis on owner branding, electrical, HVAC, and plumbing prints, and their use in the industry.

MECHANICS TRAINING - TIER 4 DIESEL ENGINE AIR INDUCTION & EMISSIONS CONTROL

Mechanics Training - Tier 4 Diesel Engine Air Induction and Emissions Control

This course will give the student a strong foundation in Diesel engine air induction and emissions control. Upon completion, participants will be able to:

- Describe the functions, construction, types, styles, and applications of diesel engine intake systems and crankcase ventilation systems.
- Identify and describe the construction, types, styles, and application of turbochargers.
- Describe the functions, construction, and applications of diesel engine exhaust gas recirculation strategies.
- Explain the principles of operation of diesel exhaust emission aftertreatment systems and methods for performing inspection and diagnostic procedures.
- Identify and describe circuit monitoring strategies for out-of-range fault detection and identify and describe principles of fault detection and diagnosis.

The learning environment will be established in both the classroom and the service shop.

PIPELINE - SIDEBOOM - LIVE DRAW WORKS - KENTUCKY

Sideboom - Intermediate training

This class is a one week course. The course schedule is 10 hours a day, 6 days a week, Monday - Saturday. A typical day will consist of 2 hours of classroom training followed by 8 hours of practical field training.

Classes are intended for experienced operators, although apprentices with journeyman level skills are encouraged to apply. A proficiency test will be given at the beginning of the course.

This course will prepare you for working in the pipeline industry. The following subjects will be covered:

- A pipeline spread - Explain in depth each individual crew

- Live Draw works controls
- How to properly steer the sideboom around obstacles while carrying a section of pipe.
- How to catch the load that is being carried
- How to cross-clutch
- How to correctly carry pipe with the aid of a swamper
- How to carry a section of pipe with one or multiple machines
- Pipeline terminology and vocabulary
- Safety

PIPELINE - EXCAVATOR - MAT HANDLING/BRIDGE BUILDING TRAINING

This is a one week course. The course will be 6 days in length, Monday - Saturday consisting of 10 hours a day of field training. Apprentices and Journeyman are encouraged to apply. A proficiency test will be given at the beginning of the class.

During the class, the operator will be challenged with different tasks utilizing mats.

- carrying single or multiple mats
- building bridges across wetlands or creek crossings
- rip-rapping mats
- lay mats down on the ROW
- Work with multiple excavators laying down large bridge mats

GPS ROVER TRAINING FOR LEICA, TOPCON AND TRIMBLE

GPS Rover Training - This course will focus on all three Major systems; Leica, Trimble, Topcon.
Members will learn the basics of all three systems during class room hours and will be given the option to focus on any one of the three systems in the field. Field exercises will include but are not limited to; Volume Calcs, Lay out, Grade Checking, Line work and Surface creation, Calibrating and set up of a job site, Importing and Exporting from Rover to Machine and Machine to Rover.
Total Station set up will also be taught.