International Union of Operating Engineers

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

Training Course Schedule

Courses from June 11, 2024 - August 10, 2024

Course - Session	Date(s)
New Organizer Training 2024	Jun 18, 2024 - Jun 21, 2024
Excavation Operations	Jun 24, 2024 - Jun 28, 2024
Electrical Systems 2	Jun 24, 2024 - Jun 28, 2024
OSHA 503 Update for General Industry Outreach Trainers	Jul 8, 2024 - Jul 10, 2024
Basic Controls and Building Automation Systems	Jul 13, 2024 - Jul 15, 2024
Pump Maintenance & Operation	Jul 15, 2024 - Jul 18, 2024
Mechanics Training - Tier 4 Diesel Engine Air Induction & Emissions Control	Jul 22, 2024 - Jul 26, 2024
Crane Operations - Intro To Luffing Crawler Crane Operations	Jul 22, 2024 - Jul 26, 2024
Drone Training	Jul 22, 2024 - Jul 26, 2024
GPS Training for Instructors Only	Jul 23, 2024 - Jul 25, 2024
Electrical Troubleshooting & Variable Frequency Drive Operations	Jul 25, 2024 - Jul 28, 2024
Generator Maintenance & Operation	Jul 29, 2024 - Aug 1, 2024
Crane Operations - Level 1 Crane Operations for Beginners	Jul 29, 2024 - Aug 2, 2024
Excavation Operations	Jul 29, 2024 - Aug 2, 2024
Chiller Efficiency	Aug 1, 2024 - Aug 3, 2024
Pipeline - ONLINE OILER TRAINING	Aug 1, 2024 - Aug 1, 2024
NATE Test Prep	Aug 2, 2024 - Aug 4, 2024
Excavation Operations	Aug 5, 2024 - Aug 9, 2024

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Pump Maintenance & Operation	Aug 5, 2024 - Aug 8, 2024
Data Center Operations	Aug 5, 2024 - Aug 9, 2024
Crane Operations - Practical Testing for NCCCO Certification	Aug 5, 2024 - Aug 9, 2024
Stationary Training Conference	Aug 6, 2024 - Aug 7, 2024

Training Course Descriptions

NEW ORGANIZER TRAINING 2024

International and Local staff will conduct detailed training sessions on all aspects of organizing workers and contractors. Breakout sessions will focus on issues specific to H&P and Stationary, and general sessions will cover organizing techniques and strategies, legal issues, research and the use of social media and technology in organizing.

This training is designed for organizers with less than two years' experience, but is open to all organizers who have not previously attended. Due to the highly interactive nature of this training, class size will be limited to 30 attendees. Please note that this course is only open to current local union staff who are working as organizers/agents.

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.

OSHA 503 UPDATE FOR GENERAL INDUSTRY OUTREACH TRAINERS

OPEN TO IUOE INSTRUCTORS ONLY

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

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

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.

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.

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.

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.

GPS TRAINING FOR INSTRUCTORS ONLY

GPS Training for Instructors Only - Courses are available to active IUOE Instructors only.

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.

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.

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.

CHILLER EFFICIENCY

Chillers can be one of the largest energy users in a facility. This seminar provides an overview of the fundamentals of several types of chillers and how they function. It also reviews the controls of popular chiller interfaces and what to look for when monitoring them to help ensure they are running at their peak efficiency. Students have the opportunity to work with one of the three chillers in the training center which include Carrier, Trane, and York chillers.

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.

NATE TEST PREP

North American Technician Excellence (NATE) is a non-profit certification organization for HVAC-R technicians. The ITEC is an official NATE Testing Organization.

The NATE Prep is offered at the ITEC is designed for journey level engineers who have knowledge of fundamental electrical, HVAC and refrigeration principles, as well as practical field experience. The 3-Day prep session will review electrical theory, safety, circuits, troubleshooting and formulas. The session will also review HVAC system components, system operations and maintenance, system controls, refrigeration principles and air conditioning troubleshooting. The review will assist students to take the NATE "Core" and "Air Conditioning and Heat Pumps" certification tests. Both tests will be administered during the 3-day session and students must pass both tests to achieve NATE certification. Information about NATE tests and the purchase of study guides can be found at natex.org. (https://natex.org/)

It is recommended to have and review both study guides prior to the session.

Core - NATE (natex.org) Air Conditioning and Heat Pumps - NATE (natex.org)

There is $140 fee to be paid by the student for each test. (Test pricing subject to change per NATE)

DATA CENTER OPERATIONS

Data Center Operation is a core skill for Operating engineers. This course will introduce the student to Data Center equipment found in mission-critical facilities where power supply and environmental control interruption is not acceptable. The program will cover an overview of the Data Center safety guidelines (OSHA 10, NFPA 70e), basic electrical theory and power distribution, switch gear operation, emergency generators, manual & automatic transfer switches, Uninterruptible Power Systems (UPS), battery types and handling procedures, Data Center specific HVAC equipment, chilled water systems, rules governing work in a Data Center, airflow management, fire risk mitigation and suppression, and general techniques used in these facilities. This will also include hands on exercises in our classroom Data Center simulation.

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

STATIONARY TRAINING CONFERENCE

Stationary Training Conference. This is for Local Union training staff and those invited by the local union to attend. Note, this is a 2 day event.