

Heavy Equipment Aboriginal Pre-Apprenticeship Training Program (11 weeks + 8 Week Work Placement)

The International Union of Operating Engineers (IUOE) Local 793's developed an Aboriginal Engagement Strategy and see the Indigenous population as one solution to meeting the skills shortages for the heavy equipment, crane and concrete pump operator industry. The Aboriginal Pre-Apprenticeship Training Program (APATP) is in its second year of operation and recruits twelve Aboriginal people throughout the province of Ontario. The Operating Engineers Training Institute of Ontario (OETIO) partnered with the provincial government of Ontario and designed this program to meet the training needs of Aboriginal peoples and industry. In particular, OETIO included the *Trade Entrance Exam Preparation Course* as part of the APATP.

Trade Entrance Exam Preparation Course (4 weeks – 160 hours)

This four week course is designed to prepare candidates to successfully pass the trade entrance exam and start an apprenticeship program.

Upon completion of the trade entrance exam preparation course the participant will need to successfully pass the trade entrance exam with 70% or higher to proceed to the next level, which is the pre-apprenticeship program.

Topics:

Test Taking Strategies

- Multiple choice strategies
- Multiple choice practice

Reading

- Extracting information
- Summarizing main points
- Drawing inferences

Math

- Basic calculations
- Metric to imperial conversions
- Geometry
- Percentages
- Ratios
- Reading graphs and charts

Trade Science

- Properties of gases, water, sound, minerals
- Principles of combustion, buoyancy, density, pH, electricity and magnetism
- Effects of heat on water, gases, metals
- Basic hydraulics
- Basic action of valves

Mechanical Aptitude and Space Relations

- Tools and instruments
- Mechanical action of gears, levers, pulleys, screws, and turbines
- Spatial relations



Heavy Equipment Pre-Apprenticeship Theory (3 weeks – 120 hours):

The Fundamentals of Heavy Equipment is a pre-requisite to the operator training program and provides participants with the fundamentals of OHS Reg. 213/91, safety, equipment types and components, operating techniques, transportation, and maintenance that apply to heavy equipment in the construction industry.

The participant also learns essential skills including numeracy, document use and computer use, which includes resume writing and a job search workshop.

Participants also complete training in Working at Heights – Fundamentals of Fall Protection, WHMIS, First Aid and CPR, Ground Disturbance, Pipeline Construction Safety Training, Basic Construction Safety Training, Propane in Construction, Traffic Control and Vertical Mast and Telescopic Boom Forklift.

Heavy Equipment Pre-Apprenticeship Trade Readiness Practical Training (2 weeks – 80 hours):

- Participants will learn how to operate 3 different machines:
 - Sheep's foot and smooth drum compactors
 - Skid steer loader (front end loader skills)
 - Compact excavator with leveling blade (packer/bulldozer/ TLB/excavator skills)
- Perform pre-operational inspection
- Comply with scheduled maintenance requirements
- Plan work procedures
- Comply with grades and stakes
- Operation of machines:
 - traveling and maneuvering machines
 - prepare a level surface with the loader.
 - build and maintain a working table.
 - dig and backfill a trench.
 - prepare a work surface three machines wide.
 - dig an excavation with spoil pile on both sides.
 - move material from a stockpile to another location.
 - grade and compact rough areas.
 - to prepare the machine to be left for an extended period.
- Operate the Heavy Equipment mechanical mini simulators (operating control skills)



As well, students are able to access the simulation lab after hours and on weekends. An after-hours simulation exercise book has been available to advance a students' skills.

Haul Truck Practical Training (10 days – 80 hours)

- Each field exercise includes an instructor led demonstration, followed by a participant practice session with ongoing coaching, skills evaluation and feedback from the instructor via two-way radio.
- Perform pre-operational inspection
- Comply with scheduled maintenance requirements
- Plan work procedures
- Follow shutdown procedure

Haul Truck:

Automatic transmission and standard transmission; articulated and non-articulated haul trucks.

- **Operate Haul Truck:**
 - Optimizes equipment capabilities;
 - Maneuvering and off road travel;
 - Monitors activities of people, vehicles and other equipment in area;
 - Positions equipment for loading/unloading;
 - Hauls materials;



Heavy Equipment Pre-Apprenticeship Training Program selection process:

In Ontario, the 15 IUOE, Local 793 area offices play a key role in the selection process of meeting with industry and owner/client representatives to identify, interview, and select pre-apprenticeship candidates. These candidates are then referred to our Apprenticeship Coordinator to ensure that the proposed candidates meet the pre-apprenticeship program requirements.

Heavy Equipment Pre-Apprenticeship Training Program Work Placement:

The student is placed on an eight week paid work placement.

This places students in the construction industry to gain exposure to a workplace and allow them to determine whether the heavy equipment trade is suitable as a career. The employers will have the opportunity to evaluate and provide valuable, timely feedback on the student's abilities, attitude, and willingness to learn. A member of our Marketing Department calls and monitors the pre-apprentices during their work placement. If any issues arise between the employer and the pre-apprentice, our Apprenticeship Coordinator supports the pre-apprentice to resolve the matter.



Course Location: OETIO Morrisburg Campus

Heavy Equipment Pre-Apprenticeship Training Program Pre-requisites:

Trade Entrance Exam successfully completed with 70% or higher after completing the 4 weeks of the Trade Entrance Exam Preparation Course

Resume

Ontario Grade 12 or equivalent (transcript)

Current driver's abstract

Elearning courses:

Health and Safety for Workers (Ministry of Labour)

WHMIS (approx. 2 hours)

Ground Disturbance (approx. 4 hours)

Pipeline Construction Safety Training (approx. 4 hours)

Union education (approx. 2 hours)

Basic Construction Safety Training (3 hours)

Vertical Mast and Telescopic Boom Forklift Operator – theory portion (approx. 2 hrs)

Total course duration: 11 weeks + 8 Week Work Placement

Participant/Instructor Ratio: Theory - 12 participants
Practical – 6 participants to 1 instructor

Participant Seat Time: Participant will always be operating one of 3 pieces of machinery on a rotational basis of 8 hours per day for practical training.

Evaluation: Trade Entrance Exam.
FHE Theory test: Mid and Final Test.
Numeracy Test.
Computer Test.
Practical evaluation. Participant must achieve 70% to pass

Certificates: OETIO certificate

Program cost breakdown

There is no charge to participant in the Aboriginal Pre-Apprenticeship Program it is sponsored by the Ministry of Advanced Education and Skill Development and International Union of Operating Engineers Local 793(IUOE Local 793).

It will be the responsibility of the Pre-Apprentice to arrange transportation to and from OETIO Campus in Morrisburg.

They will also be required to bring their own CSA approved Safety Boots, Safety Glasses, Work Gloves and Overall. Room and Board will be approved by IUOE Local 793.

Includes:

- Books
- Exams
- Hard hat and safety vest
- Certificates
 - Fundamentals of Heavy Equipment
 - Heavy Equipment Pre-Apprenticeship Training Program
 - Essential Skills training
 - Trade Readiness Practical Field Training
 - Propane in Construction
 - Traffic Control
 - WHMIS



- Working at Heights - Fundamentals of Fall Prevention
- First Aid & CPR
- Vertical Mast and Telescopic Boom Forklift
- Ground Disturbance Training
- Pipeline Construction Safety Training

***Note:** *Participants returning to be trained for heavy equipment practical training are exempt from Fundamentals of Heavy Equipment (2 weeks – 80 hours)*