



**Skilled
Trades**
Ontario

**Métiers
spécialisés**
Ontario

Supplemental Resource Guide

Heavy Equipment Operator – Tractor Loader Backhoe (TLB)

Heavy Equipment Operator – Excavator

Heavy Equipment Operator – Dozer

636A, 636B and 636C

Table of Contents

| | |
|---|----|
| Apprenticeship Pathway to a Certificate of Qualification | 1 |
| Program Summary: Reportable Subjects & Recommended Hours..... | 2 |
| Program Summary: Pre-requisites and Co-requisites..... | 3 |
| Equipment, Materials and Site Recommendations | 4 |
| Reportable Subject Mapping 2002 Learning Outcomes (Schedules of Training) to new Curriculum Standard | 6 |
| Evaluation Structure Breakdown | 7 |
| Common vs Non-Common Core Hours | 9 |
| Hours Comparison 2002 Schedules of Training to New Curriculum | 10 |

Apprenticeship Pathway to a Certificate of Qualification

Phase 1: Registration

Submit Application for Apprenticeship Training through the on-line portal or to local Service Delivery Office



For on-line portal, please follow instructions for registration. You will need to create a *My Ontario* account to access online services.

Training agreement signed and registered by both apprentice and sponsor

Access your Apprenticeship Training Standard Logbook**
skilledtradesontario.ca/about-trades/trades-information



** This is the official record of your training progress. You are responsible for keeping it up-to-date.

Complete on-the-job training
Demonstrate and receive sign-off on the competencies/skills in your Apprenticeship Training Standard Logbook

Complete in-school training
Attend and complete the in-class training set out in the Curriculum Training Standard



Apprentices eligible to apply for apprenticeship incentive grants (Red Seal trades) and loans.

Review and finalize your logbook with your sponsor

Submit proof of apprenticeship completion
via email, in-person or digital portal



Your Apprenticeship Training Standard Logbook details completion requirements. Submit the following:

- completed Apprenticeship Training Standard Logbook with signatures
- proof of hours

Certificate of Apprenticeship is issued

Phase 2: Apprenticeship

Trades without examination

CofA is the final step of the program

Trades with examination (compulsory and non-compulsory trades)*

Provisional Certificate of Qualification issued for a 12 month term



To prepare for the CofQ examination download the Provincial and/or Red Seal Exam preparation guides.

Make payment for your Certificate of Qualification examination



Call to make a payment (647-847-3000 or 1-855-299-0028)

Schedule a date to write your Examination



To schedule your examination, contact your local Service Delivery Office.

Pass Certificate of Qualification examination



Apprentices eligible to apply for Apprenticeship Completion Grant (Red Seal trades) or Apprentice Completion Bonus (non-Red Seal)

Certificate of Qualification is issued



Upon completion, Sponsors may be eligible for Apprenticeship grants, incentives, bonuses or tax credits

Phase 3: Certification

* For a list of trades subject to a certification examination, visit: skilledtradesontario.ca

**Program Summary of Reportable Subjects and Recommended Hours
Heavy Equipment Operator Trades**

*These reportable subjects are NOT common core

| Number | Reportable Subjects | Hours Total | Hours Theory | Hours Practical |
|------------------|--|--------------------|---------------------|------------------------|
| 3270 | Trade Documents | 16 | 8 | 8 |
| 3271 | Safety and trade practices | 17 | 14 | 3 |
| 3272 | Communications | 4 | 4 | 0 |
| 3273 | Introduction to the equipment | 9 | 7 | 2 |
| 3274 | Troubleshooting and repairs | 8 | 6 | 2 |
| 3282 - TLB | Maintenance and pre-operations* | 4 | 2 | 2 |
| 3285 - Excavator | | | | |
| 3288 - Dozer | | | | |
| 3283 - TLB | Operations* | 162 | 6 | 156 |
| 3286 - Excavator | | | | |
| 3289 - Dozer | | | | |
| 3275 | Post-operations | 22 | 2 | 20 |
| 3284 - TLB | Attachments and implements* | 5 | 2 | 3 |
| 3287 - Excavator | | | | |
| 3290 - Dozer | | | | |
| 3276 | Environmental protection | 4 | 4 | 0 |
| 3277 | Soil fundamentals | 8 | 4 | 4 |
| 3278 | Surveys and grades | 8 | 5 | 3 |
| 3279 | Hoisting and rigging | 16 | 6 | 10 |
| 3280 | Industry sectors (specialized work) | 8 | 7 | 1 |
| 3281 | Transportation | 9 | 3 | 6 |
| | Total | 300 | 80 | 220 |

**Program Summary - Heavy Equipment Operator Trades
Pre-requisites and Co-requisites**

| Reportable Subject | Pre-requisite | Co-requisite |
|--|---|-----------------------------|
| Trade Documents | n/a | n/a |
| Safety and trade practices | n/a | n/a |
| Communications | n/a | n/a |
| Introduction to the equipment | n/a | n/a |
| Troubleshooting and repairs | Introduction to the Equipment | n/a |
| Maintenance and Pre-Operations – TLB | Introduction to the Equipment | n/a |
| Maintenance and Pre-Operations – Excavator | | |
| Maintenance and Pre-Operations - Dozer | | |
| Operations - TLB | Introduction to the Equipment | n/a |
| Operations - Excavator | | |
| Operations - Dozer | | |
| Post-operations | Introduction to the Equipment Maintenance and Pre-Operations (relevant trade) | n/a |
| Attachments and Implements - TLB | Introduction to the Equipment | n/a |
| Attachments and Implements - TLB | | |
| Attachments and Implements - TLB | | |
| Environmental protection | n/a | Soil Fundamentals |
| Soil fundamentals | n/a | Environmental Protection |
| Surveys and grades | n/a | n/a |
| Hoisting and rigging | Introduction to the Equipment | n/a |
| Industry sectors (specialized work) | Introduction to the Equipment Attachments and Implements (relevant trade) | n/a |
| Transportation | Introduction to the Equipment | n/a |

Equipment, Materials and Site Recommendations for Training Delivery Agents

The purpose of the Curriculum Standard is to establish the highest standard for learning and expectations for knowledge transfer for apprentices.

As a result, in order to meet the in school learning outcomes and objectives set out in this Curriculum Standard for Heavy Equipment Operator – Excavator, Heavy Equipment Operator – Dozer and Heavy Equipment Operator – Tractor Loader Backhoe, Skilled Trades Ontario, in consultation with the curriculum steering committee and working group, recommends that designated Training Delivery Agents (TDAs) have the following tools, materials, and/or equipment for use during the implementation of this curriculum.

This list provides recommendations for the delivery of all Reportable Subjects.

| Category | Recommended Equipment, Materials and Site Requirements | | |
|-------------|--|--|--|
| | <p>For the 3 HEO trades, seat time is critical to ensure knowledge and skill transfer. As a result, the ratio of equipment to student for the 3 HEO trades should be 1:1.</p> <p>If the TDA is running all three trades, the seat time could be distributed amongst the different pieces of equipment.</p> | | |
| | Excavator | Tractor Loader Backhoe | Dozer |
| Equipment | <p>Minimum 10-ton excavator, steel tracked</p> <p>1 excavator for every 1 student</p> <p>Float (Haul vehicle) Dump truck</p> | <p>Minimum 70 horsepower Tractor Loader backhoe (e.g. 310 John Deere, 410 CAT, 580 Case)</p> <p>1 TLB for every 1 student</p> <p>Float (Haul vehicle) Dump truck</p> | <p>Minimum 60 horsepower, steel tracked, 6-way blades (e.g. D3 CAT, John Deere 450)</p> <p>1 Dozer for every 1 student</p> <p>Float (Haul vehicle)</p> |
| Attachments | <p>Minimum: 90 cm (36 inch) wide excavation bucket with teeth</p> <p>Quick attach connect (at least 1 for demonstration purposes)</p> | <p>Minimum: front yard & ¼ bucket, 24 inch (60 cm) rear excavation bucket with teeth</p> | <p>1 out of every 2 dozers should have ripper attachment</p> |
| Tools | <p>Grease gun</p> <p>Hammer (sledge and regular)</p> <p>Scrapers</p> <p>Track shovels</p> <p>Punches</p> <p>Tape measure</p> | <p>Grease gun</p> <p>Hammer (sledge and regular)</p> <p>Scrapers</p> <p>Punches</p> <p>Tape measure</p> <p>Measuring rod</p> | <p>Grease gun</p> <p>Hammer (sledge and regular)</p> <p>Scrapers</p> <p>Track shovels</p> <p>Punches</p> <p>Tape measure</p> |

| | | | |
|--------------------------|---|---|---|
| | Measuring rod | | Measuring rod Cross head Eye level |
| Materials | Wooden pickets Marker paint PVC pipe (for utility exposures) Operator's manual | Wooden pickets Marker paint PVC pipe (for utility exposures) Operator's manual | Wooden pickets Marker paint Operator's manual |
| Site requirements | Type 3 soil (OHSA) Minimum 1 machine distant apart from each other (approximately 5 meters) Lunch and classroom space | Type 3 soil (OHSA) Minimum 1 machine distant apart from each other (approximately 5 meters) Lunch and classroom space | Type 3 soil (OHSA) Minimum 1 machine distant apart from each other (approximately 5 meters) Lunch and classroom space |
| Other | Laser system | Laser system | GPS and laser system |
| Instructor/student ratio | 1:6 | 1:6 | 1:6 |

Reportable Subject Mapping 2002 Learning Outcomes (From the Schedules of Training) to New Curriculum Standard

| New Reportable Subject# | New Reportable Subject Curriculum Standard | Old Reportable Subject# | Old Reportable Subject 2002 Schedules of Training |
|-------------------------|--|-------------------------|--|
| 3270 | Trade Documents | n/a | New (some objectives were previously covered in Introduction and Safety) |
| 3271 | Safety and trade practices | 1.0 | Introduction and Safety |
| 3272 | Communications | n/a | New (some objectives were previously covered in Introduction and Safety) |
| 3273 | Introduction to the equipment | n/a | New |
| 3274 | Troubleshooting and repairs | n/a | New |
| 3282 - TLB | Maintenance and Pre-Operations TLB | 2.0 3.0 | Pre-Operation Inspection General Preventative Maintenance |
| 3285-Excavator | Maintenance and Pre-Operations Excavator | | |
| 3288 - Dozer | Maintenance and Pre-Operations Dozer | | |
| 3283 - TLB | Operations - TLB | 4.0 | Operate TLB Operate Excavator Operate Dozer |
| 3286 -Excavator | Operations - Excavator | | |
| 3289 - Dozer | Operations - Dozer | | |
| 3275 | Post-operations | n/a | New |
| 3284 - TLB | Attachments and Implements - TLB | n/a | New |
| 3287 -Excavator | Attachments and Implements - Excavator | | |
| 3290 - Dozer | Attachments and Implements - Dozers | | |
| 3276 | Environmental protection | n/a | New |
| 3277 | Soil fundamentals | n/a | New |
| 3278 | Surveys and grades | n/a | New |
| 3279 | Hoisting and rigging | n/a | New (some objectives were previously covered in Introduction and Safety) |
| 3280 | Industry sectors (specialized work) | n/a | New |
| 3281 | Transportation | 5.0 | Transporting Equipment |

Evaluation Structure Breakdown by Reportable Subject

| Reportable Subject | Evaluation Structure Breakdown | | |
|---|--------------------------------|-----------------------|------------------|
| | Theory Testing | Application Exercises | Final Assessment |
| Trade Documents | 50% | 30% | 20% |
| Safety and Trade Practices | 70% | 20% | 10% |
| Communications | 80% | 0% | 20% |
| Introduction to the Equipment | 70% | 10% | 20% |
| Troubleshooting and Repairs | 70% | 20% | 10% |
| Maintenance and Pre-Operations – Tractor Loader Backhoe | 30% | 20% | 50% |
| Maintenance and Pre-Operations – Excavator | | | |
| Maintenance and Pre-Operations – Dozer | | | |
| Operations – Tractor Loader Backhoe | 20% | 10% | 70% |
| Operations – Excavator | | | |
| Operations – Tractor Loader Backhoe | | | |

| | | | |
|--|-----|-----|-----|
| Post-Operations | 20% | 10% | 70% |
| Attachments and Implements – Tractor Loader Backhoe | 20% | 10% | 70% |
| Attachments and Implements – Excavator | | | |
| Attachments and Implements – Dozer | | | |
| Environmental Protection | 30% | 0% | 70% |
| Soil Fundamentals | 30% | 20% | 50% |
| Surveys and Grades | 70% | 10% | 20% |
| Hoisting and Rigging | 50% | 20% | 30% |
| Industry Sectors – Specialized Work | 70% | 10% | 20% |
| Transportation | 70% | 10% | 20% |

Common Vs Non-Common Core Hours

| | Hours Total | | |
|-----------------------|----------------------|----------------------------|------------------------|
| Common Core Hours | 129 hours | | |
| Non-Common Core Hours | 171 hours TLB | 171 hours excavator | 171 hours dozer |

Hours Comparison 2002 Schedules of Training to New Curriculum Standard

| New Number | New Reportable Subjects | New Hours Total | 2002 Reportable Subjects | Hours |
|------------------|--------------------------------|-----------------|----------------------------------|-------|
| 3270 | Trade Documents | 16 | | |
| 3271 | Safety and trade practices | 17 | Introduction and Safety | 26 |
| 3272 | Communications | 4 | | |
| 3273 | Introduction to the equipment | 9 | | |
| 3274 | Troubleshooting and repairs | 8 | | |
| 3282 - TLB | Maintenance and pre-operations | 4 | Pre-Operation Inspection | 26 |
| 3285 - Excavator | | | General Preventative Maintenance | 26 |
| 3288 - Dozer | | | | |
| 3283 - TLB | Operations | 162 | Operations | 81 |
| 3286 - Excavator | | | | |
| 3289 - Dozer | | | | |
| 3275 | Post-operations | 22 | | |
| 3284 - TLB | Attachments and implements | 5 | | |
| 3287 - Excavator | | | | |
| 3290 - Dozer | | | | |

| | | | | |
|------|--|------------|------------------------|------------|
| 3276 | Environmental protection | 4 | | |
| 3277 | Soil fundamentals | 8 | | |
| 3278 | Surveys and grades | 8 | | |
| 3279 | Hoisting and rigging | 16 | | |
| 3280 | Industry sectors (specialized work) | 8 | | |
| 3281 | Transportation | 9 | Transporting Equipment | 81 |
| | Total | 300 | Total | 240 |



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Heavy Equipment Operator (Excavator)
Heavy Equipment Operator (Dozer)