Area of Interest: Transportation

Motive Power Techniques - Truck and Coach Apprenticeship

Ontario College Certificate Program Code: 0529M01FWO

24 Weeks

Ottawa Campus

Our Program

Become a journeyperson in the truck and coach industry.

The Motive Power Techniques -Truck and Coach Apprenticeship Ontario College Certificate program is designed for registered apprentices in the truck and coach trade.

Applicants to the Motive Power Techniques - Truck and Coach Apprenticeship program must:

- be currently employed in the trade
- be formally registered as apprentices with the Ministry of Labour, Training and Skills Development (MLTSD)
- have a valid Offer of Classroom Training from the Ministry of Labour, Training and Skills Development that includes your Ministry Client ID and approved Class Number

If you are considering a future as truck and coach technician, you might work for businesses such as:

- bus/coach lines
- construction companies
- manufacturers
- small trucking companies
- public and private sector fleets

To learn more about apprenticeships, visit ontario.ca/page/skilled-trades for detailed information.

For Registered Apprentices:
This program fulfills the in-class requirements for your apprenticeship. It is divided into three levels (Beginner, Intermediate, Advanced) where you will alternate between going to class for 8 weeks and honing your skills through working in the field for 8-12 months.

During your labs, you study topics relating to:

- trade practices
- auxiliary systems
- engine systems
- electrical systems
- fuel systems
- vehicle electronic management
- emission systems

- drive trains
- steering
- suspension
- brake systems

At the end of this program, you qualify to write the Red Seal Endorsement (RSE) exam, which is recognized across Canada.

SUCCESS FACTORS

This program is well-suited for students who:

- Enjoy a hands-on approach to learning about the truck and coach industry.
- Have strong observational and analytical skills.
- Can work independently.

Employment

A broad range of employment opportunities may be available to truck and coach technicians. The truck and coach repair industry may include such businesses as: bus/coach lines, large and small trucking companies, construction companies, manufacturers, and public and private sector fleets.

Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Identify and troubleshoot truck and coach system faults in compliance with manufacturers` diagnostic and service procedures.
- Service and repair truck and coach engine components and subsystems in compliance with manufacturers` repair and service procedures.
- Diagnose and repair truck and coach electrical and electronic components and subsystems in compliance with manufacturers` service procedures.
- Service and repair power train components and subsystems in compliance with manufacturers` diagnostic and service procedures.
- Service truck and coach wheel end systems in compliance with manufacturers` diagnostic and repair procedures.
- Apply workshop skills and practices that support operational efficiency and shop standards.
- Diagnose and repair truck and coach fuel systems and subsystems in accordance with manufacturers` service procedures.
- Identify and inspect fluid power systems using basic testing procedures and equipment to make recommendations for maintenance and repair.
- Access data concerning repair procedures and manufacturers` updates using available technologies and established standards.
- Complete required documentation such as work orders and inspection reports, in accordance with industry standards and legislated requirements.
- Support client retention and business partnerships by applying customer service and communication best practices relevant to the situation.
- Develop and use personal and professional strategies and plans to improve professional growth, job performance, and work relationships.
- Complete all assigned work in compliance with occupational, health, safety, and

- Complete all assigned work in compliance with occupational, health, safety, and environmental law, established policies and procedures, codes and regulations.

- Use hoisting and rigging techniques to safely support, move and extract truck and coach components and machinery in accordance with industry standards.

- Perform soldering operations, welding and cutting, according to industry standards and manufacturers` recommendations.

Program of Study

Level: 01	Courses	Hours
TRK8307	Engine Systems I	40.0
TRK8308	Trade Practices	40.0
TRK8309	Fluid Power Systems 1	24.0
TRK8310	Drive Train Systems 1	32.0
TRK8311	Wheel End Assemblies and Brake Systems	32.0
TRK8312	Fuel Systems 1	24.0
TRK8313	Electrical Systems 1	48.0
WEL8308	Trade Practices - Welding	8.0
Level: 02	**Courses**	**Hours**
TRK8831	Engine Systems II	40.0
TRK8832	Drive Train Systems II	40.0
TRK8833	Steering, Suspension and Brake Systems I	48.0
TRK8834	Fuel Systems II	24.0
TRK8835	Electrical Systems II	40.0
TRK8836	Vehicle Electronic Management and Emissions Systems I	16.0
TRK8837	Trade Practices and Auxiliary Systems	8.0
WEL8810	Trade Practices and Auxiliary Systems - Welding	24.0
Level: 03	**Courses**	**Hours**
TRK8840	Trade Practices and Auxiliary Systems II	24.0
TRK8841	Engine Systems III	40.0
TRK8842	Drive Train Systems III	40.0
TRK8843	Steering, Suspension and Brake Systems II	48.0
TRK8844	Fuel Systems III	24.0
TRK8845	Electrical Systems III	32.0
TRK8846	Vehicle Electronic Management and Emissions Systems II	32.0

Fees for the 2023/2024 Academic Year

Tuition fees: $1,743.86 (including textbooks, safety footwear, safety glasses, and

parking and locker fees, as applicable.

Admission Requirements for the 2024/2025 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent; OR
- Mature Student status (19 years of age or older and without a high school diploma at the start of the program).

Program Eligibility

- Prospective students must be registered apprentices with the Ministry of Labour, Training and Skills Development and must be a member in good standing with Skilled Trades Ontario (STO).
- Eligibility is determined by the Ministry of Labour, Training and Skills Development.

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Application Information

MOTIVE POWER TECHNIQUES - TRUCK AND COACH APPRENTICESHIP
Program Code 0529M01FWO

Registration for Apprenticeship programs takes place through the Ministry of Labour, Training, and Skills Development.

For further information, contact:

Ministry of Labour, Training, and Skills Development
347 Preston Street, 3rd Floor, Suite 310
Ottawa, ON K1S 3H8

http://www.ontario.ca/page/start-apprenticeship
Telephone: 613-731-7100
Toll-free: 1-877-221-1220

Contact Information

Program Coordinator(s)

- Martin Restoule, mailto:restoum@algonquincollege.com , 613-727-4723, ext. 5153

Course Descriptions

TRK8307 Engine Systems I

Apprentices are introduced to the operating principles and construction features of diesel engines pertaining to the various commercial vehicles and equipment trades. Topics include engine operating and component fundamentals, engine system identification, maintenance and service

procedures. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):TRK8308 and TRK8309 and TRK8310 and TRK8311 and TRK8312 and TRK8313

TRK8308 Trade Practices

Apprentices are introduced to trade practices and procedures in the repair and service of commercial vehicles and equipment and are prepared for a variety of commercial vehicle trades. Topics include occupational health and safety, precision measuring tools, fastening devices and torqueing procedures, bearings, seals, and sealants. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):none

TRK8309 Fluid Power Systems 1

Apprentices are introduced to fluid power systems pertaining to the various commercial vehicles and equipment trades. Topics include fluid power fundamentals, components, graphic symbols, principles of operation, hydraulic fluids and filters, conductors and connectors and maintenance schedules. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):TRK8307 and TRK8308 and TRK8310 and TRK8311 and TRK8312 and TRK8313

TRK8310 Drive Train Systems 1

Apprentices are introduced to the operating principles and construction features of drive train systems pertaining to the various commercial vehicles and equipment trades. Topics include push-type clutch and flywheel assemblies, gearing fundamentals, single countershaft manual transmissions, drive shafts, power take-off shafts, universal joints and single reduction drive axle assemblies. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):TRK8307 and TRK8308 and TRK8309 and TRK8311 and TRK8312 and TRK8313

TRK8311 Wheel End Assemblies and Brake Systems

Apprentices are introduced to the operating principles and construction features of brake systems pertaining to the various commercial vehicles and equipment trades. Topics include purpose, fundamentals, principles of operation, maintenance, and the servicing of hydraulic and air brake systems. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):TRK8307 and TRK8308 and TRK8309 and TRK8310 and TRK8312 and TRK8313

TRK8312 Fuel Systems 1

Apprentices are introduced to the operating principles and construction features of fuel systems pertaining to the various commercial vehicles and equipment trades. Topics include fundamentals of diesel fuel systems, diesel fuel injection principles, diesel fuel injection sub-systems and diesel hydraulic injection. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):TRK8307 and TRK8308 and TRK8309 and TRK8310 and TRK8311 and TRK8313

TRK8313 Electrical Systems 1

Apprentices are introduced to the operating principles and construction features of electrical systems pertaining to the various commercial vehicles and equipment trades. Topics include introduction to electricity, electrical laws, test equipment, circuits and calculations, circuits and protective devices, circuit repair, electromagnetic devices and battery fundamentals. Approximately 60 per cent of the course is dedicated to theory instruction, the remaining 40 per cent centres on practical applications.

Prerequisite(s): none
Corerequisite(s):TRK8307 and TRK8308 and TRK8309 and TRK8310 and TRK8311 and TRK8312

TRK8831 Engine Systems II

Apprentices examine the theory and applications of diesel cylinder heads and valve trains, diesel cylinder block assemblies, and gasoline and alternate fueled engines. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis and servicing of these engine systems.

Prerequisite(s): TRK8307
Corerequisite(s):TRK8832 and TRK8833 and TRK8834 and TRK8835 and TRK8836

TRK8832 Drive Train Systems II

Apprentices examine the theory and applications of heavy-duty drivelines and includes pull-type clutches and flywheel assemblies, multiple countershaft manual shift transmissions and auxiliary sections, multiple speed and double reduction drive axle assemblies, power divided tandem drive assemblies and electronically automated standard transmissions. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8310
Corerequisite(s):TRK8831 and TRK8833 and TRK8834 and TRK8835 and TRK8836

TRK8833 Steering, Suspension and Brake Systems I

Apprentices examine the theory and applications of air, hydraulic and air over hydraulic brake systems, tires and wheel assemblies, wheel end assemblies, and mechanical and air suspension systems. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8311
Corerequisite(s):TRK8831 and TRK8832 and TRK8834 and TRK8835 and TRK8836

TRK8834 Fuel Systems II

Apprentices examine the theory and applications of diesel injection systems, electronic unit injection systems, engine governing, and gasoline and alternate fuel injection systems. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8312
Corerequisite(s):TRK8831 and TRK8832 and TRK8833 and TRK8835 and TRK8836

TRK8835 Electrical Systems II

Apprentices examine the theory and applications of electrical and electronic fundamentals, heavy duty batteries, cranking circuits, electrical circuit interpretation, and truck and coach auxiliary electrical components. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair and servicing of these components and systems.

Prerequisite(s): TRK8313
Corerequisite(s):TRK8831 and TRK8832 and TRK8833 and TRK8834 and TRK8836

TRK8836 Vehicle Electronic Management and Emissions Systems I

Apprentices examine the theory and applications of electronic service tools, vehicle computer fundamentals and electronic input circuit components. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8312 and TRK8313
Corerequisite(s):TRK8831 and TRK8832 and TRK8833 and TRK8834 and TRK8835

TRK8837 Trade Practices and Auxiliary Systems

Apprentices examine the theory and application of applied trade practices, information accessing, communication systems, cabs and control systems, and truck, trailer and articulating coach combinations.

Prerequisite(s): TRK8308
Corerequisite(s):none

TRK8840 Trade Practices and Auxiliary Systems II

Apprentices examine the theory and applications of heating, ventilation and air conditioning systems. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems. Apprentices also examine the regulatory requirements relating to the truck and coach trade.

Prerequisite(s): none
Corerequisite(s):TRK8841 and TRK8842 and TRK8843 and TRK8844 and TRK8845 and TRK8846

TRK8841 Engine Systems III

Apprentices examine the theory and applications of heavy-duty intake and exhaust systems, turbochargers and roots blowers, cooling systems and coolants, lubrication systems and oils, engine brakes and retarders, engine component failure analysis, engine diagnostic procedures and practices, diesel engine run-in and testing. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8831
Corerequisite(s):TRK8840 and TRK8842 and TRK8843 and TRK8844 and TRK8845 and TRK8846

TRK8842 Drive Train Systems III

Apprentices examine the theory and applications of torque converters, automatic transmissions, electronically controlled automatic transmissions, transfer cases, drop boxes and power take-off assemblies. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8832
Corerequisite(s):TRK8840 and TRK8841 and TRK8843 and TRK8844 and TRK8845 and TRK8846

TRK8843 Steering, Suspension and Brake Systems II

Apprentices examine the theory and applications of brake system diagnostics, anti-lock brake systems (ABS), automatic traction control systems (ATC), roll and directional stability systems (RDS), medium and heavy duty steering axle systems, vehicle alignment, mechanical and hydraulic power assist steering systems, coupling devices, and truck, coach, bus, and trailer frames and bodies. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems. Students also examine pneumatic circuit interpretation and analysis.

Prerequisite(s): TRK8833
Corerequisite(s):TRK8840 and TRK8841 and TRK8842 and TRK8844 and TRK8845 and TRK8846

TRK8844 Fuel Systems III

Apprentices examine the theory and applications of diesel fuel systems including hydraulically actuated electronic unit injector systems (HEUI), electronic unit pump systems, time-pressure electronic common rail systems, and, common rail accumulator systems. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8834
Corerequisite(s):TRK8840 and TRK8841 and TRK8842 and TRK8843 and TRK8845 and TRK8846

TRK8845 Electrical Systems III

Apprentices examine the theory and applications of heavy duty charging circuits, electronic ignition systems, and electrical component reconditioning and troubleshooting. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair, and servicing of these components and systems.

Prerequisite(s): TRK8835
Corerequisite(s):TRK8840 and TRK8841 and TRK8842 and TRK8843 and TRK8844 and TRK8846

TRK8846 Vehicle Electronic Management and Emissions Systems II

Apprentices examine the theory and applications of customer and proprietary data programming, multiplexing, emission controls and testing, hybrid drive systems and collision avoidance systems. Topics include an exploration of definitions, operating principles, design features, inspection, testing, diagnosis, repair and servicing of these components and systems.

Prerequisite(s): TRK8836
Corerequisite(s):TRK8840 and TRK8841 and TRK8842 and TRK8843 and TRK8844 and TRK8845

WEL8308 Trade Practices - Welding

Apprentices are introduced to trade practices and procedures in the repair and service of commercial vehicles and equipment. Students are prepared for a variety of commercial vehicle trades. Topics include heating and cutting methods.

Prerequisite(s): none
Corerequisite(s):none

WEL8810 Trade Practices and Auxiliary Systems - Welding

Apprentices examine the theory and application of arc welding and MIG welding.

Prerequisite(s): WEL8308
Corerequisite(s):none