

HEAVY MECHANICAL TRADES CERTIFICATE

Purpose

The Heavy Mechanical Trades Foundation Certificate prepares students for work and apprenticeships in the Heavy Duty, Truck and Transport, Diesel Engine, and Transport Trailer trades. Upon successful completion of this 36 week- full-time program, graduates will possess the basic knowledge and skills required to safely service, maintain, diagnose, repair, and operate the equipment or vehicles related to these trades at an apprentice Level One.

Additionally, students will have completed the SkilledTradesBC Level One technical training for apprenticeship in any of the four transportation trades.

Heavy Mechanical Trades Foundation students inspect, service, and repair heavy trucks, commercial trucks, buses, diesel engines, transport trailers, cranes, graders, drills, bulldozers and other heavy equipment for proper performance. They may also perform limited diagnostics on vehicles and equipment to determine the extent of the required repair. Students have the opportunity to develop the ability to work on engines and engine support systems, hydraulic systems, pneumatics, and drive trains and perform general maintenance and repairs including adjusting equipment, welding and cutting, repairing or replacing defective parts, components or systems, and using hand and power tools and test equipment.

Duration

This full-time program is delivered over 3 terms for a total of 36 weeks. Classes are held 4 days per week. Students have a maximum of 2 years to complete the program.

Learning Outcomes

Upon successful completion of this program, graduates will be able to:

1. Apply foundational and essential job skills
2. Work in accordance with occupational health and safety standards
3. Service and repair brake systems (hydraulic and air)
4. Service hydraulic systems
5. Service and diagnose electrical systems and components
6. Service, diagnose, and repair frames, steering and suspensions
7. Service, diagnose, and repair trailer landing gear, accessories, systems and components
8. Diagnose and repair heating, ventilation and air conditioning systems and components
9. Service engine supporting systems
10. Remove and install diesel engines
11. Service drive train systems

12. Remove and install transmissions, drivelines, differentials, and final drives

13. Service cab structures and components

Admission Requirements

- English 10 or equivalent
- Apprentice and Workplace Math 10, or equivalent

Program Requirements

Term One		Credits
HMEC 1101	Safe Work Practices	1
HMEC 1106	Tools and Equipment 1	1
HMEC 1107	Tools and Equipment 2	1
HMEC 1111	Fasteners and Fittings	1
HMEC 1116	Equipment Operation	1
HMEC 1126	Lubricants and Bearings	1
HMEC 1131	Employment Skills	1
HMEC 1160	Cutting and Welding 1	1
HMEC 1161	Cutting and Welding 2	1
HMEC 1165	Math, Science and Loads	1
HMEC 1170	Final Drives and Undercarriage	1
HMEC 1175	Frames, Wheels, Tires and Hubs	1
Credits		12

Term Two		Credits
HMEC 1235	Steering Systems	1
HMEC 1240	Suspension Systems 1	1
HMEC 1241	Suspension Systems 2	1
HMEC 1245	Hydraulic Systems	1
HMEC 1250	Hydraulic System Service	1
HMEC 1255	Electricity	1
HMEC 1260	Batteries & Elect Test Instrum	1
HMEC 1265	Starters and Charging Systems	1
HMEC 1270	Elec Circuits, Cab & Protectiv	1
HMEC 1275	Hydraulic Brakes Systems	1
HMEC 1280	Power Brakes	1
HMEC 1285	Air Brakes 1	1
Credits		12

Term Three		Credits
HMEC 1315	Air Brakes 2	1
HMEC 1320	Heating & Air Conditioning Sys	1
HMEC 1325	Landing Gear, Trailers & Coupl	1
HMEC 1330	Trailer Components	1
HMEC 1335	Diesel Fuel & Engine Supp Syst	1
HMEC 1340	Diesel Engine Removal	1
HMEC 1345	Diesel Engine Installation	1
HMEC 1350	Gas Fuel Systems and Ignition	1
HMEC 1355	Transmissions	1
HMEC 1360	Drivelines	1
HMEC 1365	Drive Axles and Differentials	1

HMEC 1370	Employment Preparation	1
Credits		12
Total Credits		36

This guide is intended as a general guideline only. The college reserves the right to make changes as appropriate.

Evaluation of Student Learning

Learning is evaluated through practical assignments, projects, theory quizzes and exams, and practical exams. Students are also evaluated on their attendance, active participation, and teamwork. Safe work practices are assessed on an ongoing basis throughout the program.

Students must complete all courses with a minimum grade of 70%, consistent with SkilledTradesBC standards.

Prior Learning Assessment and Recognition (PLAR)

Prior learning assessment and recognition is not available for this program.

Transcript of Achievement

The evaluation of learning outcomes for each student is prepared by the instructor and reported to the Student Records Department at the completion of semesters.

The transcript typically shows a letter grade for each course. The grade point equivalent for a course is obtained from letter grades as follows:

Grading Standard

Grade	Percentage	Description	Grade Point Equivalency
	96-100		4.33
	91-95		4.00
	86-90		3.67
	81-85		3.33
	76-80		3.00
	70-75	Minimum Pass	2.67
			2.33
			2.00
			1.67
			1.00
	0-69	Failing Grade - unable to proceed to next Term	0.00
I		Incomplete	N/A
IP		Course in Progress	N/A
W		Withdrawal	N/A
Course Standings			
R		Audit. No Credits	N/A
EX		Exempt. Credit Granted	N/A
TC		Transfer Credit	N/A

Grade Point Average (GPA)

1. The course grade points shall be calculated as the product of the course credit value and the grade value.
2. The GPA shall be calculated by dividing the total number of achieved course grade points by the total number of assigned course credit values. This cumulative GPA shall be determined and stated on the Transcript at the end of each Program level or semester.
3. Grades shall be assigned to repeated courses in the same manner as courses taken only once. For the purpose of GPA calculation of grades for repeated courses, they will be included in the calculation of the cumulative GPA.