

Heavy Equipment Technician (HEA) Apprenticeship Curriculum Mapping

Program Curriculum

A collection of 15 CTS courses has been developed to align with the current Heavy Equipment Technician Course Outline. These courses, when combined, cover the First Period technical training content.

Alberta Apprenticeship Training Profile First Period	CTS Course Alignment to Apprenticeship First Period Topics	Assessment
Topic	CTS Course Number and Name	
SECTION ONE – STANDARD WORKPLACE SAFETY, MATERIALS AND TOOLS		
Safety Legislation, Regulations and Industry Policy in the Trades	HEA3900: Apprenticeship Safety	
Climbing, Lifting, Rigging and Hoisting		
Hazardous Materials and Fire Protection		
Communication		
Lifting Procedures and Wire Rope		
Materials and Fastening Devices	HEA3400: Basic Tools & Materials	
Hand, Shop and Power Tools		
Measuring Tools		
Oxyacetylene Equipment, Heating and Cutting	HEA3405: Bearings & Seals	
SECTION TWO – SUSPENSIONS, WHEELS AND SYSTEMS		
Bearings and Seals	HEA3405: Bearings & Seals	
Frame and Suspension Fundamentals	HEA3410: Frames & Suspension	
Frame and Suspension Service		
Wheels, Tires and Hubs	HEA3415: Wheels & Preventive Maintenance	
Preventive Maintenance		
Trailer Systems and Components	HEA3420: Trailer Systems	
Coupling Units Fundamentals and Service		
Landing Gear Fundamentals and Service		
Orientation to Trailer Inspection		
SECTION THREE – HYDRAULICS 1 AND HYDRAULIC BRAKE SYSTEMS		
Hydraulic Brake System Fundamentals	HEA3425: Brake Fundamentals	
Hydraulic Brake System (Drum and Disc)		
Hydraulic Brake System Diagnosis and Service		

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Topic	CTS Course Number and Name	
SECTION THREE – HYDRAULICS 1 AND HYDRAULIC BRAKE SYSTEMS (CONTINUED)		
Hydraulic Brake Booster System Fundamentals and Service	HEA3430: Brake Service & Repair	
Parking Brake System Fundamentals and Service		
Electric Brake Fundamentals and Service		
Hydraulic Fundamentals	HEA3435: Hydraulic Systems	
Hydraulic System Components: Reservoir, Filters, Hoses and Coolers		
Hydraulic System Components: Pumps, Valves and Cylinders		
SECTION FOUR – ELECTRICAL I AND ELECTRONICS I		
Electrical Theory	HEA3440: Electrical Theory	
Electrical Circuits		
Magnetism		
Test Equipment	HEA3445: Electrical Service	
Battery Fundamentals and Service		
Electrical Wiring, Lighting Circuits and Circuit Protection		
Basic Electronics	HEA3450: Electronics	
Electronic Control Systems		
SECTION FIVE – AIR BRAKES		
Air Brake System Fundamentals	HEA3455: Air Brake Fundamentals	
Truck/Tractor Air Brake System Components		
Air Brake System Mechanical Components	HEA3460: Air Brake Mechanics	
Trailer Air Brake System Components		
Air Brake System Testing and Service	HEA3465: Air Brake Service	
Air Antilock Brake System Fundamentals		
CTS COURSES THAT ALLOW STUDENTS ADDITIONAL PRACTICAL TIME		
	HEA3470: HEA Practicum A	
	HEA3475: HEA Practicum B	
	HEA3480: HEA Practicum C	
	HEA3485: HEA Practicum D	

