



Medium/Heavy Vehicle and Truck Technology/Technician CIP Code 47.0613

Introduction – Program of Study

Medium/heavy vehicles and mobile equipment are indispensable to many industrial activities, from construction to railroad transportation. Medium/heavy vehicle and mobile equipment service technicians and mechanics repair and maintain engines and hydraulic, transmission, and electrical systems for this equipment. Farm machinery, cranes, bulldozers, and railcars are all examples of heavy vehicles that require such service.

With many types of modern equipment, technicians can use diagnostic computers to diagnose components needing adjustment or repair. If necessary, they may partially dismantle affected components to examine parts for damage or excessive wear. Then, using hand held tools they repair, replace, clean, and lubricate parts as necessary. After reassembling the component and testing it for safety, they put it back into the equipment and return the equipment to the field.

Service technicians diagnose electrical problems and adjust or replace defective components. They also disassemble and repair undercarriages and track assemblies. When hydraulic components malfunction, technicians examine them for fluid leaks, ruptured hoses, or worn gaskets on fluid reservoirs. Occasionally, technicians weld broken equipment frames and structural parts, using electric or gas welders.

Technicians use a variety of tools in their work. These tools may include power tools or common hand tools to work on small parts and to get at hard to reach places. They may use a variety of computerized testing equipment to pinpoint and analyze malfunctions in electrical systems and other essential systems. Employers typically furnish expensive power tools, computerized engine analyzers, and other diagnostic equipment, but hand tools are normally accumulated with experience, and many experienced technicians have thousands of dollars invested in them.

It is common for technicians in large shops to specialize in one or two types of repair. Technicians in smaller shops, on the other hand, generally perform multiple functions. Technicians also specialize in types of equipment. Mobile heavy equipment mechanics and service technicians may keep construction and surface mining equipment in working order. Typically, these workers are employed by equipment wholesale distribution and leasing firms, large construction and mining companies, government agencies, and other organizations operating and maintaining heavy machinery and equipment fleets. Service technicians employed by the federal government may work on tanks and other armored military equipment.

Farm equipment mechanics service, maintain, and repair farm equipment, as well as smaller lawn and garden tractors sold to homeowners. Farmers have increasingly turned to farm equipment dealers to service and repair their equipment because the machinery has grown in complexity. Modern equipment uses more computers, electronics, and hydraulics, making it difficult to perform repairs without specialized training and tools.

Many occupations in this program of study require training in secondary career and technical education centers, related or on the job experience, or an associate's degree earned at the postsecondary level.

Assumptions of this Program of Study

High quality programs should meet the following standards:

1. Promote positive working relationships.
2. Implement a curriculum that fosters all areas of skill development
3. Use appropriate and effective teaching approaches.
4. Provide ongoing assessments of student progress.
5. Employ and support qualified teaching staff.
6. Establish and maintain relationships and use resources of the community.
7. Provide a safe and healthy learning environment.
8. Implement strong program organization and supervision policies that result in high quality teaching and learning.
9. Integrate academic skills and aptitudes necessary for postsecondary education, gainful employment and a foundation of lifelong learning.

CIP Code

47.0613 Medium/Heavy Vehicle and Truck Technology/Technician

This is an instructional program that prepares individuals to apply technical knowledge and skills to the specialized maintenance and repair of trucks, buses, and other commercial and industrial vehicles. The program includes instruction in diesel engine mechanics, suspension and steering, brake systems, electrical and electronic systems, preventive maintenance inspections, drive trains, HVAC systems, and auxiliary equipment installation and repair.

For more information, contact:

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