Bus and Truck Mechanics and Diesel Engine Specialists

SOC Code 49-3031 • Projected Growth (2020) 5 %

Description

What Diesel Service Technicians and Mechanics Do

Diesel service technicians and mechanics inspect, repair, or overhaul buses, trucks, and anything else with a diesel engine.

Duties

- Follow a checklist of inspection procedures
- Test drive vehicles to diagnose malfunctions
- Read and interpret diagnostic test results, often by using dials, gauges, and other computer equipment
- Raise trucks, buses, and heavy parts or equipment by using hydraulic jacks or hoists
- Inspect brake systems, steering mechanisms, transmissions, engines, and other parts of vehicles
- Do routine maintenance, such as changing oil, checking batteries, and lubricating equipment and parts
- Adjust and align wheels, tighten bolts and screws, and attach system components
- Repair or replace malfunctioning components, parts, and other mechanical or electrical equipment
- Disassemble and reassemble equipment and parts
- Test drive vehicles to ensure that they run smoothly

Because of their efficiency and durability, diesel engines have become the standard in powering our nation's trucks and buses. Other heavy vehicles and mobile equipment, including bulldozers and cranes, also are powered by diesel engines, as are many commercial boats, passenger vehicles, pickups, and other work trucks. Diesel service technicians who service and repair these engines are commonly known as *diesel mechanics*.

Diesel mechanics handle many kinds of repairs. They may work on a vehicle's electrical system, make major engine repairs, or retrofit engines with emission control systems to comply with pollution regulations.

Diesel engine maintenance is becoming increasingly complex as engines and other components use more electronic systems to control their operation. For example, fuel injection and engine timing systems rely heavily on microprocessors to maximize fuel efficiency. In most shops, workers often use hand-held or laptop computers to diagnose problems and adjust engine functions.

In addition to computerized diagnostic equipment, diesel mechanics use a variety of power and machine tools, such as pneumatic wrenches, lathes, grinding machines, and welding equipment. Handtools, including pliers, wrenches, and screwdrivers, are also commonly used.

Employers typically provide expensive power tools and computerized equipment, but workers generally acquire their own hand tools over time.

For information on technicians and mechanics who work primarily on automobiles, see the profile on automotive service technicians and mechanics.

For information on technicians and mechanics who work primarily on farm equipment, construction vehicles, and rail cars, see the profile on heavy vehicle and mobile equipment service technicians.

For information on technicians and mechanics who primarily work on motorboats, motorcycles, and small all-terrain vehicles, see the profile on small engine mechanics.

Training Opportunities Linked to Those Jobs
(Degree Types and Colleges/Universities)

How to Become a Diesel Service Technician or Mechanic

Many diesel mechanics learn informally on the job, but employers increasingly prefer applicants who have completed postsecondary training programs in diesel engine repair. Although not required, industry certification is important for diesel mechanics.

Education and Training

Most employers require a high school diploma or equivalent. High school or postsecondary courses in automotive repair, electronics, and mathematics provide a strong educational background for a career as a diesel mechanic.

Many employers look for workers with postsecondary training in diesel engine repair. A large number of community colleges and trade and vocational schools offer programs in diesel engine repair. These programs usually last 6 months to 2 years and may lead to a certificate of completion or an associate's degree.

Programs mix classroom instruction with hands-on training, including the basics of diesel technology, repair techniques and equipment, and practical exercises. Students also learn how to interpret technical manuals and electronic diagnostic reports.

Graduates usually advance to journey-worker status, where they may then work with minimal supervision.

Training

Some diesel mechanics begin working without postsecondary education and are trained on the job. Trainees are assigned basic tasks, such as cleaning parts, checking fuel and oil levels, and driving vehicles in and out of the shop.

After they learn routine maintenance and repair tasks and demonstrate competence, trainees move on to more complicated jobs. This process can last from 3 to 4 years, at which point a trainee is usually considered a journey-level diesel mechanic.

Over the course of their careers, diesel mechanics must learn new techniques and equipment. Employers often send experienced mechanics to special training classes conducted by manufacturers and vendors to learn about the latest diesel technology.

Certification

Certification from the National Institute for Automotive Service Excellence (ASE) is the recognized industry credential for diesel and other automotive service technicians and mechanics. Although not required, this certification shows a diesel mechanic's competence, experience, and value to potential employers and clients.

Diesel mechanics may be certified in specific repair areas, such as drive trains, electronic systems, or preventative maintenance and inspection. To earn certification, mechanics must have 2 years' work experience and pass one or more ASE exams. To remain certified, diesel mechanics must pass the test again every 5 years.

Licenses

Some diesel mechanics may be required to have a commercial driver's license if their job duties include test driving buses or large trucks.

Important Qualities

***Customer-service skills*.** Diesel mechanics frequently talk to their customers about automotive problems and work that they have planned, started, or completed. They must be courteous, good listeners, and ready to answer customers' questions.

***Dexterity*.** Mechanics need a steady hand and good hand-and-eye coordination for many tasks, such as disassembling engine parts, connecting or attaching components, or using hand tools.

***Mechanical skills*.** Diesel mechanics must be familiar with parts and components of engines, transmissions, braking mechanisms, and other complex systems. They must also be able to disassemble, work on, and reassemble parts and machinery.

***Technical skills*.** Modern diesel engines rely heavily on electronic systems to function. Diesel mechanics must be familiar with how the electronic systems operate and with the tools needed to work on them.

***Troubleshooting skills*.** Diesel mechanics must be able to identify mechanical and electronic problems, make repairs, and offer a proper maintenance strategy.

Postsecondary Education

Texas Southmost College	South Texas College	Texas State Technical College	The University of Texas at Brownsville	The University of Texas - Pan American
	Certificate of Proficiency in Diesel Technology			
	Associates of Applied Science in Diesel Technology			

Local Employers

AAA Cooper Transportation	La Feria		Lee Elementary School	La Feria
Aca Transport	Rancho Viejo		Sea Garden Industrial Supplies	Brownsville
Ben Milam Elementary School	Harlingen		Tommy Graham's Paint & Body	Harlingen

Career Options

(Specific Job Types)

- Mechanic
- Diesel Mechanic
- Bus Mechanic
- General Repair Mechanic
- Diesel Technician
- Trailer Mechanic
- Transit Mechanic
- Truck Mechanic
- Fleet Mechanic
- Service Technician

Salary Ranges

Wages for **Bus and Truck Mechanics and Diesel Engine Specialists**

Location	Pay Period	2012				
		10%	25%	Median	75%	90%
United States	Hourly	$12.89	$16.18	$20.35	$25.45	$30.41
	Yearly	$26,800	$33,700	$42,300	$52,900	$63,300
Texas	Hourly	$11.99	$15.02	$18.79	$23.57	$28.01
	Yearly	$24,900	$31,200	$39,100	$49,000	$58,300
Brownsville-Harlingen, TX MSA	Hourly	$8.98	$11.24	$14.68	$18.16	$24.07
	Yearly	$18,700	$23,400	$30,500	$37,800	$50,100

Professional Associations linked to the Careers

For general information about careers, education, or certification, visit
Association of Diesel Specialists
National Institute for Automotive Service Excellence
National Automotive Technicians Education Foundation

Sources

The information provided in this document was collected from the following sources:

- Occupational Outlook Handbook (http://www.bls.gov/ooh/)
- O*NET OnLine (http://www.onetonline.org/)
- Texas CARES (http://www.texascaresonline.com/)
- CareerOneStop (http://www.careeronestop.org/)

Bus and Truck Mechanics and Diesel Engine Specialist

Transportation, Distribution & Logistics

Course Overview: Focuses on careers in the planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water, and related professional and technical support services.

Career Goal (O*NET Code): (49-3031) - Diesel service technicians and mechanics inspect, repair, or overhaul buses, trucks, and anything else with a diesel engine.

Student Name: _____

Grade: _____

School: _____

SUGGESTED COURSEWORK

Middle School	8th	***HS Courses:***	Exploring Careers		
High School	9th	***Core Courses*:***	English I Algebra I or Geometry Biology	World Geography Foreign Language I Physical Education	Fine Arts
		Career-Related Electives:	Principles of Transportation, Distribution and Logistics		
	10th	***Core Courses:***	English II Geometry or Algebra II Chemistry	World History Foreign Language II Elective	Elective
		Career-Related Electives:	Energy, Power and Transportation Systems or Aircraft Technology		
	11th	***Core Courses:***	English III Algebra II Physics/Principles of Technology	~~United States History~~ Foreign Language III** Professional Communications or Speech	
		Career-Related Electives:	Transportation Systems Management or Logistics, Planning and Management Systems or Advanced Aircraft Technology		
	12th	***Core Courses:***	English IV AP Calculus 4th Science	Government/Economics Fine Arts Elective	
		Career-Related Electives:	Advanced Aircraft Technology or Advanced Electronics or Practicum in Transportation, Distribution and Logistics		

EXTENDED LEARNING EXPERIENCES

Curricular Experiences:

Business Professionals of America
Future Business Leaders of America
SkillsUSA
Technology Student Association

Extracurricular Experiences:

Language Immersion Programs
School Newspaper
Student Government
UIL Academic Competitions
Yearbook

Career Learning Experiences:

Career Preparation
Internship
Job Shadowing

Service Learning Experiences:

Campus Service Organizations
Community Service Volunteer
Peer Mentoring / Peer Tutoring

COLLEGE CREDIT OPPORTUNITIES -- High School

Students should take Advanced Placement (AP), International Baccalaureate (IB), dual credit, Advanced Technical Credit (ATC), or locally articulated credit courses, if possible. List those courses that count for college credit on your campus.

How to Become a Bus and Truck Mechanic and Diesel Engine Specialist

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Career Options:

- Mechanic
- Diesel Mechanic
- Bus Mechanic
- General Repair Mechanic
- Fleet Mechanic
- Diesel Technician
- Trailer Mechanic
- Transit Mechanic
- Truck Mechanic
- Service Technician

Professional Associations:

Association of Diesel Specialists
National Institute for Automotive Service Excellence
National Automotive Technicians Education Foundation

Postsecondary

Texas Southmost College | **South Texas College** | **Texas State Technical College**

Certificate of Proficiency in Diesel
Associates of Applied Science in Diesel Technology

University of Texas at Brownsville | **University of Texas - Pan American**

***Students must meet local & state graduation requirements. ** Required coursework for Distinguished Graduation Plan (In addition to other measures). *** Based on campus availability. Students may select other elective courses for personal enrichment purposes.**

This plan of study serves as a guide, along with other career planning materials, for pursuing a career path and is based on the most recent information as of 2012. All plans meet high school graduation requirements as well as college entrance requirements.