

**DIESEL ENGINE MECHANIC
(Time-Based)**

APPENDIX A

O*NET CODE 49-3031.00

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

WORK PROCESSES

	Approximate Hours
A. Orientation	750
1. Learning and practicing general shop safety.	
2. Developing familiarity with shop routine(s).	
3. Acquiring basic knowledge of shop equipment, tools, and terminology.	
4. Introducing general concepts of engine operation and preventive maintenance.	
5. Studying engine prints.	
B. Brakes and Air Systems	675
1. Adjusting and repairing air, electric, and hydraulic-operated brake systems.	
2. Repairing brake and air system components, including but not limited to: S-cam brakes, disc brakes, Anti-lock brake systems (ABS), air dryers, air compressors, air governors and air reservoirs.	
C. Steering and Suspension Systems	675
1. Maintaining, repairing, and replacing steering system components.	
2. Repairing and replacing shock absorbers.	
3. Maintaining, repairing, and replacing power steering systems.	
4. Maintaining, repairing, and replacing hydraulic suspension systems.	

D. Electronics	900
<ol style="list-style-type: none"> 1. Working with alternators and regulators. 2. Maintaining, repairing, and replacing wire and light systems, and electric motors. 3. Maintaining, repairing, and replacing batteries, gauges, and electronic control systems. 	
E. Engines	1500
<ol style="list-style-type: none"> 1. Learning and recognizing diesel engine components and their functions. 2. Tuning up engines. 3. Performing failure analysis. 4. Maintaining, repairing, and replacing engine systems, including fuel, cooling, air, lubrication, and computerized controls. 	
F. Power Trains	825
<ol style="list-style-type: none"> 1. Working with manual and automatic transmissions. 2. Working in differentials and power dividers. 3. Working on clutches and drive shafts. 4. Maintaining, repairing, and replacing mechanical, pneumatic, hydraulic, and electronic control devices. 	
G. Heating, Ventilation, and Air Conditioning (HVAC)	75
<ol style="list-style-type: none"> 1. Performing preventative maintenance on HVAC systems (trade-specific). 2. Repairing and replacing HVAC systems and components as required. 3. Testing and issuing EPA emissions certifications. 	
H. Hydraulic and Exhaust Systems	600
<ol style="list-style-type: none"> 1. Maintaining, repairing, and replacing hydraulic systems and components. 2. Maintaining, repairing, and replacing exhaust systems and components. 	

Approximate Total Hours 6000

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <https://dol.ny.gov/public-work-and-prevailing-wage>

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APPENDIX B

RELATED INSTRUCTION

Safety & Health

1. General Workplace Safety
2. Right-to-Know/Material Safety Data Sheets (MSDS)
3. First Aid & CPR (minimum 6.5 hours every 3 years)
4. Sexual Harassment Prevention Training – must comply with Section 201-g of the Labor Law

Engineering and Design Drawings

1. Diesel Engine Schematics
2. Wiring Diagrams and Schematics

Trade Theory and Science

1. Tools, Machines, and Equipment
2. Fundamentals of Electricity
3. Engine Design, Controls, and Components (various manufacturers)
4. Injection Systems
5. Brake Systems
6. Suspension Systems
7. Electrical Systems and Testing Equipment
8. Service Information Systems and Diagnostic Software
9. Introduction to Hybrid and Electrical Vehicles
10. Diagnostics- Manual and Computer
11. Drive Train Theory and Repair

Other Workplace Skills

Other courses as necessary

A Minimum of 144 Hours of Related Instruction is Required for Each Apprentice for Each Year.

Appendix B topics are approved by New York State Education Department.