# INDUSTRIAL TRUCK MECHANIC

## 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. Assist Skilled Mechanic** **400**

**B. Overall Inspection and Preventive Maintenance** **800**

1. Control hazardous energy (block and jack truck according to manufacturers' recommendations; properly secure mast; lock out/tag out; discharge capacitors, etc.)
2. Inspect all safety-related devices (including horn, back-up alarm, seat belt, brakes, parking brake, mast chains, fork wear, attachments)
3. Follow regular Preventive Maintenance schedule
4. Lubricate and clean
5. Make minor repairs and adjustments
6. Note parts that show wear
7. Schedule their replacement to prevent breakdown
8. Perform emissions testing
9. Record completion of work in written or computerized format

**C. Mechanical Repairs and Troubleshooting** **2100**

1. Effectively use computer diagnostics
2. Drive units (at least 3 of the following):
   a. gasoline driven
   b. electric motor driven
   c. fluid drive
   d. diesel driven
   e. liquefied petroleum (LP) driven
   f. fuel cell driven

3. Axle assemblies
4. Steering assemblies
5. Power transmission
6. Brake systems
7. Exhaust systems
8. Pollution controls
9. Lift units (at least 3 different types)
10. Tilt units
    a. hydraulic
    b. electric power driven
    c. electric
11. Drive and trailing wheels and tires
    a. wheel bearings, tires, alignment, bearing preload, lug nut torque
12. Mechanical controls and hydraulic equipment
    a. pumps
    b. control valves
    c. lines (tubing, piping, fittings)
    d. mechanical interlock and hydraulic controls
    e. cylinders – single and double acting
    f. packing
13. Wire guidance (if available)

**D. Electrical Repair, Maintenance and Troubleshooting** **2100**

1. Demonstrate understanding of truck's operating system and what kind of messages are sent. Re-install and re-program system as needed
2. Accurately read pin-out matrix
3. Effectively use computer diagnostics
4. Trace control and power circuits; check for grounds, shorts, open circuits, corrosion on connectors (pins and plugs)
5. Tune-up carburetion, ignition
    a. Test, repair and replace solenoids, contactors, controllers, motors, switches, resistors, meters

b. Motor removal and installation; wire and rewire; install new brushes; inspect, clean and true armature

6. Battery
   a. Follow safety procedures, electrostatic discharge precautions
   b. Clean and check battery posts, cables, straps, and battery containers
   c. Charge, remove, replace

**E. Miscellaneous** **600**

1. Jacking, tie down, transport, towing
2. Read and understand job orders
3. Plan sequence of work
4. Drive repaired vehicle to verify conformance to specifications
5. Welding, as applied to the trade, following all safety procedures and policies
6. Minor frame and bodywork
7. Interchange of material handling devices (if applicable)
8. Document all work performed, and additional work needed, in complete and logical way, using computer or written format

**Approximate Total Hours 6,000**

*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*

## INDUSTRIAL TRUCK MECHANIC

## APPENDIX B

## RELATED INSTRUCTION

### Safety and Health

1. Industrial Safety
2. Proper Use of Personal Protective Equipment (PPE)
3. Lift Truck Safety (including jacking, tie down, towing)
4. Lock Out/Tag Out
5. Operator Training (as required by OSHA Regulation 1910.178)
6. Right-to-Know/Material Safety Data Sheets (MSDS)
7. Proper Disposal of Waste (oil, filters, fluids, etc.)
8. First Aid – minimum 6.5 hours every 3 years

### Blueprint Reading and Sketching

1. Interpreting Schematics
2. Reading Wiring Diagrams, Pin-Out Matrix
3. Reading Flow Diagrams
4. Reading Technical Manuals

### Mathematics

1. Mathematics for the Mechanical Trades

### Trade Theory and Science

1. Basic Metallurgy
2. Mechanical Theory as Applied to the Trade
3. Electrical Theory as Applied to the Trade
4. Fundamentals of Hydraulics
5. Care and Use of Tools and Equipment
6. Preventive Maintenance
7. Industrial Batteries: Safe Use, Care and Service
8. AC Motors
9. AC Motor Controls
10. DC Motors and Motor Controls (if applicable)
11. Mechanical Maintenance of Industrial Trucks

12. Electrical Maintenance of Industrial Trucks
13. Fuel Cell Theory and Maintenance (if applicable)
14. Diagnosing and Troubleshooting
15. Welding for the Trade
16. Safe Use of Hoists (if applicable)
17. Wire Guidance (if used on the job)

**Other Workplace Skills**

1. Computer Skills (including basic PC; messages, codes and tests)
2. Sexual Harassment Prevention Training – must comply with section 201-g of the Labor Law

**Other Related Courses as Required**

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.