# Competency Task List – Secondary Component

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

# High School Graduation Years 2023, 2024, 2025

## 100 Orientation and Safety

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
|  | RESERVED (101) |   |   |
| 102 | Research diesel occupations and certification programs. |  |  |
| 103 | Identify truck classifications and configurations. |  |  |
| 104 | Use service manuals and online service information. |  |  |
| 105 | Follow safety procedures and safe equipment operation. |  |  |
|  | RESERVED (106) |  |  |
| 107 | Follow Environmental Protection Agency (EPA) standards for cleaning and disposal of waste and fluids. |  |  |
| 108 | Exhibit professional and personal standards and work habits and ethics in a diesel shop. |  |  |
| 109 | Comply with Occupational Safety and Health Administration (OSHA) regulations. |  |  |

## 200 Tools and Fasteners/Hardware

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 201 | Use basic hand tools and power tools. |   |   |
| 202 | Use fasteners, fittings, and hardware. |   |   |
| 203 | Drill and use threading tools and extractors. |   |   |
| 204 | Use precision measuring tools. |   |   |
|  | RESERVED (205) |   |   |
| 206 | Set up/Shut down, cut, and heat with an oxy-acetylene torch. |   |   |

## 300 Suspension and Steering Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 301 | Inspect and repair or replace steering linkage. |  |   |
| 302 | Inspect and adjust basic wheel alignment and inspect tires. |  |   |
|  | RESERVED (303) |  |  |
| 304 | Inspect and test/service a power steering system. |  |  |
| 305 | Service wheel bearings and hubs according to Transportation Motor Control (TMC) guidelines. |  |  |
| 306 | Inspect and replace shock absorbers. |  |  |
| 307 | Inspect and replace king pins. |  |  |
| 308 | Inspect and replace leaf springs. |  |  |
| 309 | Inspect and repair or replace air suspension components. |  |  |
| 310 | Inspect and service wheel assemblies. |  |  |

## 400 Preventive Maintenance

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 401 | Determine preventive maintenance intervals and procedures. |  |   |
| 402 | Perform preventive maintenance inspection. |  |   |
|  | RESERVED (403) |  |  |

## 500 Brake System

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 501 | Inspect and repair or replace hydraulic disc brake components. |   |   |
|  | RESERVED (502) |   |   |
| 503 | Inspect and repair or replace S-cam drum brake components. |  |  |
|  | RESERVED (505) |  |  |
| 506 | Inspect and replace or adjust air governors. |  |  |
| 507 | Replace hydraulic brake lines and bleed brakes.  |  |  |
| 508 | Inspect and repair or replace air brake lines. |  |  |
| 509 | Inspect and diagnose and replace air brake chambers. |  |  |
| 510 | Inspect and diagnose and replace master cylinder and hydraulic system components. |  |  |
| 511 | Diagnose and repair or replace anti-lock brake system (ABS) components. |  |  |
| 512 | Inspect and repair or replace air brake valves. |  |  |
| 513 | Inspect and repair or replace air dryers. |  |  |
| 514 | Inspect and repair or replace air disc brake components. |  |  |
|  | RESERVED (515) |  |  |
|  | RESERVED (516) |  |  |
| 517 | Inspect and replace and adjust slack adjusters. |  |  |

## 600 Diesel Engines

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 601 | Explain diesel engine operation and identify parts. |   |   |
| 602 | Remove, inspect, and install camshaft and valve train components. |   |   |
| 603 | Remove, inspect, and install piston, connecting rod, and liner. |   |   |
| 604 | Remove, inspect, and install crankshaft and bearings (mains and rods). |   |   |
| 605 | Replace engine oil seal. |  |  |
| 606 | Perform diesel tune-up (set overhead). |  |  |
| 607 | Remove, inspect, and install cylinder head and gasket. |  |  |
| 608 | Remove, inspect, and install oil pump. |  |  |
| 609 | Remove, inspect, and install vibration dampener and flywheel. |  |  |

## 700 Air Intake and Exhaust Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 701 | Inspect and repair or replace air induction system components. |   |   |
| 702 | Inspect and repair or replace exhaust system and components. |  |  |
| 703 | Inspect and replace charge air coolers and after coolers. |  |  |
| 704 | Inspect and repair or replace turbocharger. |  |  |

## 800 Cooling Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 801 | Inspect and replace belts and pulleys. |   |   |
| 802 | Inspect and replace hoses and clamps. |   |   |
| 803 | Test and replace thermostat. |   |   |
| 804 | Drain, flush, refill, and bleed cooling system. |  |  |
| 805 | Test anti-freeze and supplemental coolant additives. |  |  |
|  | RESERVE (806) |  |  |
| 807 | Inspect and replace water pump. |  |  |
| 808 | Inspect fan drives. |  |  |
| 809 | Inspect and pressure test cooling system components.  |  |  |

## 900 Fuel System

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 901 | Replace fuel filters and strainers. |   |   |
| 902 | Inspect and replace fuel lines, tank, cap, and fittings. |   |   |
| 903 | Prime and bleed fuel system. |   |   |
|  | RESERVE (904) |  |  |
| 905 | Perform fuel supply and return system tests. |  |  |
| 906 | Remove and install injector/nozzle. |  |  |

## 1000 Electrical/Electronic System

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1001 | Test and service battery. |   |   |
| 1002 | Test, replace and adjust bulbs and lamps. |   |   |
| 1003 | Diagnose and repair or replace electrical circuits and components. |   |   |
| 1004 | Test starting system and replace component assemblies. |  |  |
| 1005 | Test charging system output and replace component assemblies. |  |  |
| 1006 | Analyze and interpret wiring diagrams. |  |  |
| 1007 | Perform computer systems tests and analyze codes. |  |  |

## 1100 Drive Line

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1101 | Diagnose, replace, and adjust drive-line components. |   |   |
| 1102 | Perform clutch/clutch brake maintenance and adjustment. |   |   |
| 1103 | Remove and install clutch assembly. |   |   |
|  | RESERVED (1104) |  |  |

1 Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)

Secondary CTE Instructor Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[PA In-Demand Occupations List (PA IDOL)](https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.workstats.dli.pa.gov%2FProducts%2FIDOL%2FPages%2Fdefault.aspx&data=04%7C01%7Celw12%40psu.edu%7C465d2f58a43f45631dac08d9e0349a4c%7C7cf48d453ddb4389a9c1c115526eb52e%7C0%7C0%7C637787338795980555%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=yZW%2BaPOFwIBGxV3Jk72%2BGXlAbGWgkjCVKy%2FQtYol1F0%3D&reserved=0)

[Industry-Recognized Credential Resource Guide](https://www.education.pa.gov/K-12/Career%20and%20Technical%20Education/Resources/Teacher%20Resources/IndustryRecognized/Pages/default.aspx)