

Enter Student Name

Enter School / Training Facility

**ARTICULATION COMPETENCY RECORD**

**Baker College**

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| Please check below each skill the student has mastered with a minimum of 80 percent accuracy. |

**DSL141 Diesel Electrical/Electronic Systems I**

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| **Task** | | | **Satisfactory** | **Unsatisfactory** |
| **A. Electrical/Fundamentals** | | |  |  |
| 1. | Understand the principles of electricity. | |  |  |
| 2. | Define the following: | |  |  |
|  | a. | A simple circuit |  |  |
|  | b. | Voltage |  |  |
|  | c. | Current |  |  |
|  | d. | Resistance |  |  |
|  | e. | Series circuit |  |  |
|  | f. | Parallel circuit |  |  |
|  | g. | Series-parallel circuit |  |  |
| 3. | Demonstrate knowledge of working safely with electrical/electronic components on a vehicle. | |  |  |
| **B. Electrical/Electronic Systems Battery Diagnosis and Repair** | | |  |  |
| 4. | Perform battery load test; determine needed action. | |  |  |
| 5. | Determine battery state of charge using an open circuit voltage test. | |  |  |
| 6. | Inspect, clean, and service battery; replace as needed. | |  |  |
| 7. | Inspect and clean battery boxes, mounts, and hold downs; repair or replace as needed. | |  |  |
| 8. | Charge battery using slow or fast charge method as appropriate. | |  |  |
| 9. | Inspect, test, and clean battery cables and connectors; repair or replace as needed. | |  |  |
| 10. | Jump start a vehicle using jumper cables and a booster battery or auxiliary power supply using proper safety procedures. | |  |  |
| 11. | Perform battery capacitance test; determine needed action. | |  |  |
| **C. Electrical/Electronic Systems Starting System Diagnosis and Repair** | | |  |  |
| 12. | Perform starter circuit cranking voltage and voltage drop tests; determine needed action. | |  |  |
| 13. | Inspect and test components (key switch, push button and/or magnetic switch) and wires in the starter control circuit; replace as needed. | |  |  |
| 14. | Inspect and test, starter relays and solenoids/switches; replace as needed. | |  |  |
| 15. | Remove and replace starter; inspect flywheel ring gear or flex plate. | |  |  |
| **D. Electrical/Electronic Systems Charging System Diagnosis and Repair** | | |  |  |
| 16. | Diagnose instrument panel mounted volt meters and/or indicator lamps that show a no charge, low charge, or overcharge condition; determine needed action. | |  |  |
| 17. | Diagnose the cause of a no charge, low charge, or overcharge condition; determine needed action. | |  |  |
| 18. | Inspect and replace alternator drive belts, pulleys, fans, tensioners, and mounting brackets; adjust drive belts and check alignment. | |  |  |
| 19. | Perform charging system voltage and amperage output tests; determine needed action. | |  |  |
| 20. | Perform charging circuit voltage drop tests; determine needed action. | |  |  |
| 21. | Remove and replace alternator. | |  |  |
| 22. | Inspect, repair, or replace connectors and wires in the charging circuit. | |  |  |
| 23. | Diagnose AC voltage leakage (failed rectifier) at alternator output; determine needed action. | |  |  |

Teacher signature Enter Date