# General Service II Course No. 40152 Credit: 1.0

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| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes:Mobile Equipment Maintenance (47.9999) - Technology Strand I

Course Description: A comprehensive, **application level** course designed to provide students with knowledge in the theory of operation, the equipment, and the skills necessary for employment in the field of automotive and light truck service. (Prerequisite: General Service I.)

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Shop Operations and Safety

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Demonstrate and apply safe working practices with tools and machines. |  |
| 1.2 | Identify and follow safety procedures as outlined in OSHA guidelines. |  |
| 1.3 | Identify & retrieve sources of service information. |  |
| 1.4 | Demonstrate proper handling of chemicals used in the automotive shop. |  |
| 1.5 | Utilize PPE (personal protective equipment) properly in all required shop areas. |  |
| 1.6 | Demonstrate proper handling and disposal of hazardous materials. |  |

## Benchmark 2: Engine Repair

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Demonstrate engine removal and installation procedures. |  |
| 2.2 | Inspect cooling system components. |  |
| 2.3 | Disassemble, clean, and inspect engine components. |  |
| 2.4 | Perform engine diagnostic tests. |  |
| 2.5 | Perform engine maintenance procedures. |  |

## Benchmark 3: Drive Train

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Perform fluid service on transmissions and axles. |  |
| 3.2 | Demonstrate drive shaft removal and installation. |  |
| 3.3 | Service u-joints. |  |
| 3.4 | Inspect and service CV joint equipped drivelines. |  |
| 3.5 | Research and differentiate between four-wheel drive and AWD operation. |  |
| 3.6 | Research and differentiate between FWD and RWD. |  |
| 3.7 | Research and discuss clutch operation and service. |  |

## Benchmark 4: Suspension and Steering

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Demonstrate knowledge of steering and suspensions. |  |
| 4.2 | Inspect and replace steering fluid. |  |
| 4.3 | Inspect system for leaks and determine necessary action. |  |
| 4.4 | Demonstrate knowledge of component replacement. |  |
| 4.5 | Perform a pre-alignment inspection. |  |
| 4.6 | Demonstrate knowledge of principles of steering geometry. |  |
| 4.7 | Rotate tires according to manufacturer’s recommendation. |  |
| 4.8 | Dismount, inspect, and repair wheels and tires. |  |
| 4.9 | Balance wheel/tire assembly. |  |
| 4.10 | Demonstrate working knowledge of proper wheel torque. |  |
| 4.11 | Demonstrate proper service of tire pressure monitoring (TPM) systems. |  |

## Benchmark 5: Brakes

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Demonstrate knowledge of brake principles. |  |
| 5.2 | Inspect and service brake fluid. |  |
| 5.3 | Demonstrate brake system bleeding procedures. |  |
| 5.4 | Repair and/or replace hoses, fittings, and lines. |  |
| 5.5 | Replace brake pads, shoes, and associated assemblies. |  |
| 5.6 | Service rotors and drums according to manufacturer’s specs. |  |
| 5.7 | Inspect caliper and wheel cylinder assemblies. |  |
| 5.8 | Service wheel hub and/or bearing assemblies. |  |
| 5.9 | Perform operational brake inspection. |  |

## Benchmark 6: Electrical Systems

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 6.1 | Demonstrate knowledge of electrical principles. |  |
| 6.2 | Solder/repair electrical wiring and connections. |  |
| 6.3 | Utilize schematics in electrical diagnoses. |  |
| 6.4 | Research and explain basic diagnostic and troubleshooting processes. |  |
| 6.5 | Perform starting and charging system tests. |  |
| 6.6 | Demonstrate the proper usage of a test light and DVOM. |  |
| 6.7 | Demonstrate battery service. |  |
| 6.8 | Test, diagnose, and repair electrical systems. |  |

## Benchmark 7: HVAC

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 7.1 | Compare and Contrast HVAC systems. |  |
| 7.2 | Demonstrate proper refrigerant identification and recovery procedures ; conduct performance tests of HVAC system and determine necessary action. |  |

## Benchmark 8: Engine Performance

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 8.1 | Perform engine scan tests ; interpret scan data and trouble codes. |  |
| 8.2 | Perform emissions testing. |  |
| 8.3 | Perform engine diagnostic procedures. |  |
| 8.4 | Discuss and compare/contrast fuel systems. |  |
| 8.5 | Diagnose problems with intake and exhaust systems. |  |

## Benchmark 9: Alternative Energy

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 9.1 | Research and compare/contrast basic alternative power systems. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

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