

TECHNOLOGY/2: AUTOMOTIVE SYSTEMS (90 Hours)

Course No.: 79-90-85

COMPETENCY CHECKLIST

Student Name _____

Teacher Name _____ School Site _____

Start Date _____ Completion Date _____ Certificate Date _____

Teacher Signature _____ Student Signature _____

Signature verifies completion of course competencies)

A. INTRODUCTION AND SAFETY (2 hrs)

- _____ 1. Scope and purpose of course
- _____ 2. Overall course content
- _____ 3. Classroom policies and procedures
- _____ 4. First aid and emergency procedures
- _____ 5. Occupations in industry for auto tech
- _____ 6. Gender equality in industry for auto techs
- _____ 7. Cal/OSHA workplace requirements for auto techs
- _____ 8. EPA legislation for transportation industry
- _____ 9. ARB legislation for transportation industry
- _____ 10. BAR standards for safety/environment
- _____ 11. MSDS in automotive industry
- _____ 12. Safety items required by feds/state/local
- _____ 13. Role of NATEF in auto technician training
- _____ 14. NATEF standards for protective clothing/gloves
- _____ 15. NATEF standards: protective respiratory gear
- _____ 16. NATEF standards for protective eye gear
- _____ 17. NATEF standards for proper ventilation
- _____ 18. NATEF standards: chemical/material disposal
- _____ 19. Safety test

B. RESOURCE MANAGEMENT REVIEW (1 hr)

- _____ 1. Resource management principles/techniques
- _____ 2. Management of time, materials, personnel
- _____ 3. Effective use of time, material, personnel
- _____ 4. Benefits of effective resource management
- _____ 5. Environmentally responsible management

C. MEASUREMENTS REVIEW (5 hrs)

- _____ 1. Features/Functions of auto measuring tools
- _____ 2. Review /demonstrate use of tools
- _____ 3. Compare measurement pre-/post-test scores

D. TOOLS AND EQUIPMENT REVIEW (2 hrs)

- _____ 1. Features/Functions: common auto hand tools
- _____ 2. Discuss/demonstrate use of auto hand tools
- _____ 3. Features/Functions: power tools & equipment
- _____ 4. Demonstrate use of power tools & equipment

E. ENGINE DESIGNS: FOREIGN (5 hrs)

- _____ 1. Features/Functions of various engine designs
- _____ 2. Four-stroke cycle
- _____ 3. Cylinder configurations of domestic vehicles

F. IGNITION SYSTEMS (9 hrs)

- _____ 1. Features/Functions of various ignition systems
- _____ 2. Identify and discuss ignition systems
- _____ 3. Diagnose ignition troubles and perform service

G. FUEL SYSTEMS (9 hrs)

- _____ 1. Features/Functions of various fuel systems
- _____ 2. Features/Functions of fuel system components
- _____ 3. Gasoline, carburetors, turbochargers
- _____ 4. Fuel system malfunctions and maintenance

H. EXHAUST SYSTEMS (9 hrs)

- _____ 1. Features/Functions of the exhaust system
- _____ 2. Features/Functions of system components
- _____ 3. Catalytic converter systems
- _____ 4. Diagnose malfunctions and perform repairs

I. EMISSION CONTROL (9 hrs)

- _____ 1. Federal & state emission control rules/regulations
- _____ 2. Sources of auto emissions
- _____ 3. Discuss exhaust pollutants
- _____ 4. Emission control devices on automobiles
- _____ 5. Features & functions of emission control system
- _____ 6. Diagnose emission problems/servicing controls

J. MAJOR ENGINE OPERATIONS (20 hrs)

- _____ 1. Symptoms of engine mechanical problems
- _____ 2. Diagnose problems & their repair procedures

K. ALTERNATIVE POWER SOURCES (15 hrs)

- _____ 1. Features & functions of charging system in ICEV
- _____ 2. Charging systems and components
- _____ 3. Types of alternative power source vehicles
- _____ 4. Differences between a BEV & an ICEV
- _____ 5. Differences between an HEV & an ICEV
- _____ 6. Differences between an FCEV & an ICEV
- _____ 7. Differences between an FFV & an ICEV

L. EMPLOYABILITY SKILLS REVIEW (2 hrs)

- _____ 1. Employer requirements
- _____ 2. Identifying potential employers
- _____ 3. Role of social networking in job search
- _____ 4. Finalize sample résumé/cover letters
- _____ 5. Accurate, legible, and complete application
- _____ 6. Sample job applications forms correctly
- _____ 7. Importance of enthusiasm on the job
- _____ 8. Appropriate appearance on a job
- _____ 9. Upgrading of skills on a job
- _____ 10. Customer service to build relationships
- _____ 11. Appropriate interviewing techniques
- _____ 12. Resources needed for successful interview
- _____ 13. Finalize follow-up letters
- _____ 14. Appropriate follow-up procedures

M. ENTREPRENEURIAL SKILLS (2 hrs)

- _____ 1. Entrepreneurship
- _____ 2. Characteristics of successful entrepreneurs
- _____ 3. Contributions of entrepreneurs to auto industry
- _____ 4. Purpose and components of a business plan
- _____ 5. Personal goals prior to starting a business
- _____ 6. Sources of monetary investment for business
- _____ 7. Licensing requirements for auto repair shop
- _____ 8. Auto repair & maintenance business owner
- _____ 9. Sustainable vs. standard business practices