

AUTO BODY REPAIR/2: STRUCTURAL (360 Hours)

Course No.: 79-80-53

COMPETENCY CHECKLIST

Student Name _____

Teacher Name _____ School Site _____

Start Date _____ Completion Date _____ Certificate Date _____

Teacher Signature _____ Student Signature _____

(Signatures verify completion of course competencies)

A. INTRODUCTION AND SAFETY (5 hrs)

- _____ 1. Review scope and purpose of course
- _____ 2. Review classroom policies and procedures
- _____ 3. First aid and emergency procedures
- _____ 4. Occupations w/impact on auto body techs
- _____ 5. Importance of "safety first" attitude
- _____ 6. OSHA workplace requirements
- _____ 7. EPA impact on industry
- _____ 8. Impact of ARB on industry practices
- _____ 9. Use of MSDS as it applies to industry
- _____ 10. Safety items required by regulations
- _____ 11. Role of NATEF in auto tech training
- _____ 12. Proper use of protective clothing/gloves
- _____ 13. Proper use of respiratory gear in auto shop
- _____ 14. Proper use of protective eye gear
- _____ 15. NATEF standards for ventilation in auto shop
- _____ 16. Handling/storage/disposal of chemicals
- _____ 17. Pass safety test with 100% accuracy

B. TOOLS AND EQUIPMENT (20 hrs)

- _____ 1. Review common hand tools used in trade
- _____ 2. Analysis and damage repair tools
- _____ 3. Use/storage of listed shop equipment

C. TRADE MATHEMATICS REVIEW (10 hrs)

- _____ 1. Practical applications of math to industry
- _____ 2. Whole number problems
- _____ 3. Various fraction problems
- _____ 4. Various decimal problems
- _____ 5. Changing fractions to decimals
- _____ 6. Changing decimals to fractions
- _____ 7. English system of measuring length
- _____ 8. English system of measuring weight
- _____ 9. English system to measure volume/capacity
- _____ 10. English system linear units

- _____ 11. English system of units of volume/capacity
- _____ 12. English system measuring problems
- _____ 13. Measuring objects w/ tools common to trade
- _____ 14. Metric system of measuring length
- _____ 15. Metric system of measuring weight
- _____ 16. Metric system to measure volume/capacity
- _____ 17. Relationships between metric units of length
- _____ 18. Relationships between metric units of weight
- _____ 19. Problem solving with metric system
- _____ 20. Measuring techniques w/metric tools
- _____ 21. Solving geometric problems
- _____ 22. Solving algebraic problems
- _____ 23. Solving percentage problems
- _____ 24. Demo reading/interpreting graphs
- _____ 25. Demo techniques for using a calculator

D. RESOURCE MANAGEMENT REVIEW (5 hrs)

- _____ 1. Resource management principles/techniques
- _____ 2. Resource management in auto repair industry
- _____ 3. Examples of effective management
- _____ 4. Benefits of effective resource management
- _____ 5. Economic/environmental benefits/liabilities

E. STRUCTURAL ANALYSIS AND DAMAGE REPAIR: FRAME INSPECTION AND REPAIR (70 hrs)

- _____ 1. Diagnose and measure structural damage
- _____ 2. Attach vehicle to anchoring devices
- _____ 3. Analyze/straighten/align mash damage
- _____ 4. Analyze/straighten/align sag damage
- _____ 5. Analyze/straighten/align sideways damage
- _____ 6. Analyze/straighten/align twist damage
- _____ 7. Analyze/straighten/align diamond frame damage
- _____ 8. Replace damaged structural components
- _____ 9. Restore corrosion protection to frame areas
- _____ 10. Identify damaged steering components

- ___ 11. Align/replace damaged steering components
- ___ 12. Heat limitations in structural components
- ___ 13. Restore structural foam
- ___ 14. Using a universal measuring system
- ___ 15. Measure structural damage to vehicles
- ___ 16. Determine extent of direct/indirect damage
- ___ 17. Analyze and identify crush/collapse zones

- ___ 12. Determine type of weld for each operation
- ___ 13. Perform listed welds
- ___ 14. Perform visual/destructive test on weld types
- ___ 15. Causes of welding defects/make adjustments
- ___ 16. Cause of contact tip burn-back and adjust
- ___ 17. Identify cutting process for materials/locations
- ___ 18. Ways of attaching non-structural components

F. STRUCTURAL ANALYSIS AND DAMAGE REPAIR: UNIBODY INSPECTION, MEASUREMENT, AND REPAIRS (100 hrs)

- ___ 1. Identify misaligned/damaged components
- ___ 2. Realign/replace damaged components
- ___ 3. Diagnose/measure unibody damage
- ___ 4. Inspect attaching points on vehicle
- ___ 5. Extent of damage: Aluminum body panels
- ___ 6. Diagnose and measure unibody vehicles
- ___ 7. Determine extent of direct/indirect damage
- ___ 8. Attach anchoring devices to vehicle
- ___ 9. Straighten and align cowl assembly
- ___ 10. Roof rails/headers and roof panels
- ___ 11. Straighten/align hinge and lock pillars
- ___ 12. Vehicle openings, floor pans, rocker panels
- ___ 13. Straighten/align quarter panels/rear body
- ___ 14. Straighten/align front end sections
- ___ 15. Identify heat limitation in unibody vehicles
- ___ 16. Identify proper cold stress relief methods
- ___ 17. Repair damage using power and hand tools
- ___ 18. Remove/replace structures steel body panels
- ___ 19. Restore corrosion protection to unibody
- ___ 20. Extent of damage to aluminum components
- ___ 21. Analyze/identify crush/collapse zones

G. STRUCTURAL ANALYSIS AND DAMAGE REPAIR: FIXED GLASS (35 hrs)

- ___ 1. Remove and reinstall/replace fixed glass
- ___ 2. Remove and reinstall/replace modular glass

H. STRUCTURAL ANALYSIS AND DAMAGE REPAIR: METAL WELDING AND CUTTING (100 hrs)

- ___ 1. Identify weldable & non-weldable materials
- ___ 2. Weld & cut high strength and other steels
- ___ 3. Weld and cut aluminum
- ___ 4. Correct materials for specific welding job
- ___ 5. Set-up and adjust welder for material
- ___ 6. Store/handle/install hi-pressure gas cylinders
- ___ 7. Determine work clamp location and attach
- ___ 8. Use proper angle & direction of gun to joint
- ___ 9. Protect panels, glass, interiors from welding
- ___ 10. Protect computer/electronics during welding
- ___ 11. Determine joint type for weld being made

I. EMPLOYABILITY SKILLS REVIEW (10 hrs)

- ___ 1. Employer requirements in an employee
- ___ 2. Review potential employers thru job search
- ___ 3. Update sample résumés
- ___ 4. Accurate, legible application
- ___ 5. Complete sample job applications correctly
- ___ 6. Enthusiasm on the job
- ___ 7. Appropriate appearance on a job
- ___ 8. Continuous upgrading of job skills
- ___ 9. Customer service to build business

J. ENTREPRENEURIAL SKILLS (5 hrs)

- ___ 1. Define entrepreneurship
- ___ 2. Characteristics of successful entrepreneurs
- ___ 3. Contribution of entrepreneurs to industry
- ___ 4. Purpose/components of a business plan
- ___ 5. Examine personal goals before start-up
- ___ 6. Sources of monetary investment
- ___ 7. Licensing requirements in auto body business
- ___ 8. Scenario with student as business owner