Autobody Course Syllabus 2020-2021

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Course #: Autobody 1st year: 8679, 2nd year: 8680

Location: Butler Farm Campus

Office Hours : 7:30-2:45

Text: Textbooks: Autobody Repair and Refinishing

Course Fees:

1st year Autobody

Activity Fee: $17.00

Work book: $20.00

Supply Kit: $65 **Total: $102.00**

Total: $102.00

2nd year Autobody

Activity Fee: $17.00

Total : $17.00

Supply Kit: $65 **NOCTI: $19**

Total: $101.00

Course Description:

Students in this program are prepared for careers in their fields through the use of the latest technologies and state of the art equipment. Throughout the program, students gain daily practical experience by working on vehicles. Each student will become familiar with the latest finishes from single stage to multistage finishes. Selected students may be eligible for work experiences at local repair facilities.

Prerequisites:

- Desire to learn a trade and be able to stick with the grind of a physically demanding profession
- Students enter this program in their junior year
- Must pass Autobody I with a "C" or better to go to Autobody 2 their senior year.
- Manual dexterity
- Ability to follow instructions (oral and written)
- Hand eye coordination
- Stamina and willingness to spend long hours standing
- Skilled in human relations

Length of course: Autobody is a two-year course at NHREC

Grading scale:

100-90: A, 89-80: B, 79-70: C, 69-60 :D, 59- 0: F

Evaluation of Student Performance/Grading

Employability Skills 34%
Related Instruction (Tests, quizzes, workbooks, class work etc) 33%
Competencies (Hands on, and workplace skill demonstration) 33%

Quizzes and Test will be given at the end of each lesson. Lab or practical assignments will be graded daily. All work must be completed with 85% accuracy. A written exam will be given at the end of each semester. Cheating will result in an 0% for the assignment. Students will have two days upon returning to school to make-up work.

Attendance: The Attendance Policy is outlined in full in the Student

code of Conduct Manual.

Credentialing:

ASE and Work Place Readiness

Special Projects:

Skills USA is a co-curricular club that permits you to compete with others in your district and state to determine your Autobody skills and leadership skills. Students must be enrolled in Skills USA to attend Autobody sponsored field trips.

Class Procedures:

- Materials students must bring and or keep up with
- Please have a 3 ring binder paper and pen for each class And # 2 pencils (for tests)
- Safety shoes, tennis shoes, work boots etc. (no open toe shoes)
- Navy Blue coveralls or Navy Blue work pants and shirt required daily.
- Autobody supply kit: (included in fees, see above) respirator, sanding block, blow gun and mixing bucket

Classroom Rules and Regulations

1. No profanity.
2. No leaving the classroom with out permission.
3. Students may go to the snack machine only at designated times unless permission is granted by the instructor.
4. Services may only be done when permission is granted by instructor(it must be earned).
5. Absolutely no horse playing in the shop!!!!!!
6. The student that is not prepared for class with equipment or textbooks will receive a "0" for the day.
7. Students are not allowed in teacher's office without permission.
8. No sleeping allowed, ever.
9. Head phones may be used in shop, never in classroom during instruction.
10. Good attendance, attitude and the ability to work well with others is a must.

PAINTING AND REFINISHING

For every task in Painting and Refinishing, the following safety requirement must be strictly enforced:

Comply with personal and environmental safety practices associated with clothing and the use of gloves; respiratory protection; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

IV. PAINTING AND REFINISHING

A. Safety Precautions

1. Identify and take necessary precautions with hazardous operations and materials according to federal, state, and local regulations.

2. Identify safety and personal health hazards according to OSHA guidelines and the “Right to Know Law”.

3. Inspect spray environment and equipment to ensure compliance with federal, state and local regulations, and for safety and cleanliness hazards.

4. Select and use a NIOSH approved air purifying respirator. Inspect condition and ensure fit and operation. Perform proper maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation.

5. Select and use a NIOSH approved supplied air (Fresh Air Make-up) respirator system. Perform proper maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation

6. Select and use the proper personal safety equipment for surface preparation, spray gun and related equipment operation, paint mixing, matching and application, paint defects, and detailing (gloves, suits, hoods, eye and ear protection, etc.).

B. Surface Preparation

1. Inspect, remove, store, and replace exterior trim and components necessary for proper surface preparation.

2. Soap and water wash entire vehicle; use appropriate cleaner to remove contaminants.

3. Inspect and identify type of finish, surface condition, and film thickness; develop and document a plan for refinishing using a total product system.

4. Strip paint to bare substrate (paint removal).

5. Dry or wet sand areas to be refinished.

6. Featheredge areas to be refinished.

7. Apply suitable metal treatment or primer in accordance with total product systems.

8. Mask and protect other areas that will not be refinished.

9. Mix primer, primer-surfacer or primer-sealer.

10. Identify a complimentary color or shade of undercoat to improve coverage.

11. Apply primer onto surface of repaired area.

12. Apply two-component finishing filler to minor surface imperfections.

13. Block sand area to which primer-surfacer has been applied.

14. Dry sand area to which finishing filler has been applied.

15. Remove dust from area to be refinished, including cracks or moldings of adjacent areas.

16. Clean area to be refinished using a final cleaning solution.

17. Remove, with a tack rag, any dust or lint particles from the area to be refinished.

18. Apply suitable sealer to the area being refinished.

19. Scuff sand to remove nibs or imperfections from a sealer.

20. Apply stone chip resistant coating.

21. Restore caulking and seam sealers to repaired areas.

22. Prepare adjacent panels for blending.

23. Identify the types of rigid, semi-rigid or flexible plastic parts to be refinished; determine the materials needed, preparation, and refinishing procedures.

24. Identify metal parts to be refinished; determine the materials needed, preparation, and refinishing procedures.

C. Spray Gun and Related Equipment Operation

1. Inspect, clean, and determine condition of spray guns and related equipment (air hoses, regulators, air lines, air source, and spray environment).

2. Select spray gun setup (fluid needle, nozzle, and cap) for product being applied.

3. Test and adjust spray gun using fluid, air and pattern control valves.

4. Demonstrate an understanding of the operation of pressure spray equipment.

IV. PAINTING AND REFINISHING

D. Paint Mixing, Matching, and Applying

1. Identify color code by manufacturer's vehicle information label.

2. Shake, stir, reduce, catalyze/activate, and strain refinish materials.

3. Apply finish using appropriate spray techniques (gun arc, angle, distance, travel speed, and spray pattern overlap) for the finish being applied.

4. Apply selected product on test or let-down panel; check for color match.

5. Apply single stage topcoat.

6. Apply basecoat/clearcoat for panel blending and panel refinishing.

7. Apply basecoat/clearcoat for overall refinishing.

8. Remove nibs or imperfections from basecoat.

9. Refinish rigid or semi-rigid plastic parts.

10. Refinish flexible plastic parts.

11. Apply multi-stage coats for panel blending and overall refinishing.

12. Identify and mix paint using a formula.

13. Identify poor hiding colors; determine necessary action.

14. Tint color using formula to achieve a blendable match.

15. Identify alternative color formula to achieve a blendable match.

16. Identify the materials equipment, and preparation differences between solvent and waterborne technologies.

IV. PAINTING AND REFINISHING

E. Paint Defects - Causes and Cures

1. Identify blistering (raising of the paint surface, air entrapment); determine the cause(s) and correct the condition.

2. Identify a dry spray appearance in the paint surface; determine the cause(s) and correct the condition.

3. Identify the presence of fish-eyes (crater-like openings) in the finish; determine the cause(s) and correct the condition.

4. Identify lifting; determine the cause(s) and correct the condition.

5. Identify clouding (mottling and streaking in metallic finishes); determine the cause(s) and correct the condition.

6. Identify orange peel; determine the cause(s) and correct the condition.

7. Identify overspray; determine the cause(s) and correct the condition.

8. Identify solvent popping in freshly painted surface; determine the cause(s) and correct the condition.

9. Identify sags and runs in paint surface; determine the cause(s) and correct the condition.

10. Identify sanding marks or sandscratch swelling; determine the cause(s) and correct the condition.

11. Identify contour mapping/edge mapping while finish is drying; determine the cause(s) and correct the condition.

12. Identify color difference (off-shade); determine the cause(s) and correct the condition.

13. Identify tape tracking; determine the cause(s) and correct the condition.

14. Identify low gloss condition; determine the cause(s) and correct the condition.

15. Identify poor adhesion; determine the cause(s) and correct the condition.

16. Identify paint cracking (shrinking, splitting, crowsfeet or line-checking, micro-checking, etc.); determine the cause(s) and correct the condition.

17. Identify corrosion; determine the cause(s) and correct the condition.

18. Identify dirt or dust in the paint surface; determine the cause(s) and correct the condition.

19. Identify water spotting; determine the cause(s) and correct the condition.

20. Identify finish damage caused by bird droppings, tree sap, and other natural causes; correct the condition.

21. Identify finish damage caused by airborne contaminants (acids, soot, rail dust, and other industrial-related causes); correct the condition.

22. Identify die-back conditions (dulling of the paint film showing haziness); determine the cause(s) and correct the condition.

23. Identify chalking (oxidation); determine the cause(s) and correct the condition.

24. Identify bleed-through (staining); determine the cause(s) and correct the condition.

25. Identify pin-holing; determine the cause(s) and correct the condition.

26. Identify buffing-related imperfections (swirl marks, wheel burns); correct the condition.

27. Identify pigment flotation (color change through film build); determine the cause(s) and correct the condition.

IV. PAINTING AND REFINISHING

F. Final Detail

1. Apply decals, transfers, tapes, woodgrains, pinstripes (painted and taped), etc.

2. Sand, buff and polish fresh or existing finish to remove defects as required.

3. Clean interior, exterior, and glass.

4. Clean body openings (door jambs and edges, etc.).

5. Remove overspray.

6. Perform vehicle clean-up; complete quality control using a checklist.

DAMAGE ANALYSIS, ESTIMATING AND CUSTOMER SERVICE TASK LIST

For every task in Damage Analysis, Estimating and Customer Service, the following safety requirement must be strictly enforced:

Comply with personal and environmental safety practices associated with clothing and the use of gloves; respiratory protection; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

A. Damage Analysis

1. Position the vehicle for inspection.

2. Prepare vehicle for inspection by providing access to damaged areas.

3. Analyze damage to determine appropriate methods for overall repairs.

4. Determine the direction, point(s) of impact, and extent of direct, indirect, and inertia damage.

5. Gather details of the incident/accident necessary to determine the full extent of vehicle damage.

6. Identify and record pre-existing damage.

7. Identify and record prior repairs.

8. Perform visual inspection of structural components and members.

9. Identify structural damage using measuring tools and equipment.

10. Perform visual inspection of non-structural components and members.

11. Determine parts, components, material type(s) and procedures necessary for a proper repair.

12. Identify type and condition of finish; determine if refinishing is required.

13. Identify suspension, electrical, and mechanical component physical damage.

14. Identify safety systems physical damage.

15. Identify interior component damage.

16. Identify damage to add-on accessories and modifications.

17. Identify single (one time) use components.

1. Determine and record customer/vehicle owner information.

2. Identify and record vehicle identification number (VIN) information, including nation of origin, make, model, restraint system, body type, production date, engine type, and assembly plant.

3. Identify and record vehicle options, including trim level, paint code, transmission, accessories, and modifications.

4. Identify safety systems; determine replacement items.

5. Apply appropriate estimating and parts nomenclature (terminology).

6. Determine and apply appropriate estimating sequence.

7. Utilize estimating guide procedure pages.

8. Apply estimating guide footnotes and headnotes as needed.

9. Estimate labor value for operations requiring judgment.

10. Select appropriate labor value for each operation (structural, non-structural, mechanical, and refinish).

11. Select and price OEM parts; verify availability, compatibility, and condition.

12. Select and price alternative/optional OEM parts; verify availability, compatibility and condition.

13. Select and price aftermarket parts; verify availability, compatibility, and condition.

14. Select and price recyclable/used parts; verify availability, compatibility and condition.

15. Select and price remanufactured, rebuilt, and reconditioned parts; verify availability, compatibility and condition.

16. Determine price and source of necessary sublet operations.

17. Determine labor value, prices, charges, allowances, or fees for non-included operations and miscellaneous items.

18. Recognize and apply overlap deductions, included operations, and additions.

19. Determine additional material and charges.

20. Determine refinishing material and charges.

21. Apply math skills to establish charges and totals.

22. Interpret computer-assisted and manually written estimates; verify the information is current.

23. Identify procedural differences between computer-assisted systems and manually written estimates.

24. Identify procedures to restore corrosion protection; establish labor values, and material charges.

25. Determine the cost effectiveness of the repair and determine the approximate vehicle retail, and repair value.

26. Recognize the differences in estimation procedures when using different information provider systems.

27. Verify accuracy of estimate compared to the actual repair and replacement operations.

C. Vehicle Construction and Parts Identification

1. Identify type of vehicle construction (space frame, unibody, body-over-frame).

2. Recognize the different damage characteristics of space frame, unibody, and body-over-frame vehicles.

3. Identify impact energy absorbing components.

4. Identify steel types; determine repairability.

5. Identify aluminum/magnesium components; determine repairability.

6. Identify plastic/composite components; determine repairability.

7. Identify vehicle glass components and repair/replacement procedures.

8. Identify add-on accessories.

D. Customer Relations and Sales Skills

1. Acknowledge and/or greet customer/client.

2. Listen to customer/client; collect information and identify customers/client's concerns, needs and expectations.

3. Establish cooperative attitude with customer/client.

4. Identify yourself to customer/client; offer assistance.

5. Deal with angry customer/client

6. Identify customer/client preferred communication method; follow up to keep customer/client informed about parts and the repair process.

7. Recognize basic claims handling procedures; explain to customer/client.

8. Project positive attitude and professional appearance.

9. Provide and review warranty information.

10. Provide and review technical and consumer protection information.

11. Estimate and explain duration of out-of-service time.

12. Apply negotiation skills to obtain a mutual agreement.

13. Interpret and explain manual or computer-assisted estimate to customer/client.