

Virginia Western Community College
AUB 116
PL/SQL Programming

Prerequisites

None

Course Description

Teaches collision straightening procedures and use of equipment, planning repair procedures, disassembly techniques, body fastening systems, glass removal and replacement and panel repair and alignment. (4 credits)

Semester Credits: Laboratory 3 hours. Total 6 hours per week.

Required Materials

Textbook: Auto Body Repair Technology 4th Edition

Other Required Materials: Safety Glasses and Paint respirator. Both are Supplied by school.

Course Outcomes

At the completion of this course, the student should be able to:

Analyze damage to determine procedures for overall repair.

Remove and replace exterior trim and moldings.

Remove and replace interior trim and components.

Remove and replace non-structural body panels and components that may interfere with or be damaged during repair.

Remove and replace all vehicle mechanical and electrical components that may interfere with or be damaged during repair.

Protect panels, glass, and parts adjacent to the repair area.

Store parts and materials to prevent loss and damage.

Demonstrate safe use and operation of tools common to the collision repair industry.

Explain vehicle parts, assemblies, and fasteners used in the collision repair industry.

Remove and replace hood, hood hinges, and hood latch.

Remove and replace deck lids, hatches, and tailgates, including hinges and latches.

Remove and replace doors, hinges, and related hardware.

Remove and replace bumper bars, covers, reinforcement guards, isolators, and mounting hardware.

Remove and replace front fenders, headers, and other panels.

Straighten damaged panels for body filling or metal finishing.

Restore sound deadeners and foam materials.

Demonstrate hammer and dolly techniques.

Explain procedures to replace window regulators, run channels, glass, power mechanisms, and related controls.

Repair or replace removable roof panel and hinges, latches, guides, handles, retainer, and controls of sunroofs.

Replace or repair rigid, semi-rigid, and flexible plastic panels.

Topical Description

Analyze damage to determine procedures for overall repair.

Analysis should include

- determining the locations of all suspension, steering, and power train component attaching points on the body
- determining the extent of the direct and indirect damage and the direction of impact; planning the methods and sequence of repair
- determining the extent of damage to structural steel body panels; developing plan for repairing or replacing
- reviewing damage report and analyzing damage to determine appropriate methods for overall repair; developing repair plan
- determining the extent of direct and indirect damage and direction of impact on various substrates; developing repair plan.

Remove and replace exterior trim and moldings.

Procedure should include

- removing, storing, and replacing exterior trim and moldings
- locating and drilling holes for new molding and trim.

Remove and replace interior trim and components.

Procedure should include

- inspecting and removing interior components and trim
- replacing interior trim and components.

Remove and replace non-structural body panels and components that may interfere with or be damaged during repair.

Process should include

- protecting panels and parts adjacent to repair area
- checking and aligning front fenders, headers, and other panels
- inspecting, removing, and replacing bolted, bonded, and welded steel panel or panel assemblies
- inspecting, removing, replacing, and aligning hood, hood hinges, and hood latch
- inspecting, removing, replacing, and aligning deck lid, lid hinges, and lid latch
- inspecting, removing, replacing, and aligning doors, tailgates, hatches, lift gates, latches, hinges, and related hardware.

Remove and replace all vehicle mechanical and electrical components that may interfere with or be damaged during repair.

Procedure should include

- inspecting, testing, and replacing fusible links, circuit breakers, and fuses
- identifying programmable electrical/electronic components; recording data for reprogramming before disconnecting battery
- demonstrating the proper self-grounding procedures for handling electrical components
- removing and replacing head lamp/light, parking/tail lamp/light, stop lamp/light, flashers, turn signals, and backup lamp/light; checking operation
- inspecting, testing, and repairing or replacing switches, relays, bulbs, sockets, connectors, and wires of all light circuits, including four-wire tail lamp/light systems
- inspecting, replacing, and aiming head lamp/light bulbs.

Protect panels, glass, and parts adjacent to the repair area.

Protection should include

- determining whether to remove or mask trim
- allowing space for paint buildup
- selecting type and width of masking tape/paper
- considering pressure-sensitive tapes when working on fresh paint or sharp edges
- considering high-quality masking paper for two-tone painting (to avoid bleed-through)
- applying tape by stretching and pleating it in sharp curves

or

- removing and replacing fixed glass (heated and non-heated)
- removing and replacing modular glass.

Store parts and materials to prevent loss and damage.

Storage should include

- inspecting parts prior to storage
- bagging and tagging (containing and labeling anything removed)
- protecting materials that require special attention (e.g., nuts, bolts, moldings, plastics, emblems, lights)
- following hazardous materials procedures (e.g., for gasoline, coolant, refrigerant).

Demonstrate safe use and operation of tools common to the collision repair industry.

- Demonstration should include identifying and using or operating basic hand tools and power tools appropriate for the task, according to manufacturer and safety specifications.

Explain vehicle parts, assemblies, and fasteners used in the collision repair industry.

- Explanation should include identifying and describing the purpose(s) of vehicle parts, assemblies, and fasteners used in the collision repair industry.

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Remove and replace hood, hood hinges, and hood latch.

Process should include

- inspecting, removing, and replacing bolted panel or panel assemblies
- inspecting and removing hood and related hardware (e.g., washer nozzles, insulator, hood light)

- replacing and aligning hood, hood hinges, hood latches, and related hardware.

Remove and replace deck lids, hatches, and tailgates, including hinges and latches.

Process should include

- inspecting, removing, and replacing bolted panel or panel assemblies
- inspecting and removing deck lid, hatch, tailgate, and related hardware (e.g., washer nozzles, insulator, lights)
- replacing/installing and aligning deck lid, hatch, tailgate, and related hardware
- diagnosing and repairing water leaks, dust leaks, and wind noise.

Remove and replace doors, hinges, and related hardware.

Process should include

- inspecting and removing doors, hinges, and related hardware
- replacing/installing and aligning doors, hinges, and related hardware
- diagnosing and repairing water leaks, dust leaks, and wind noise.

Remove and replace bumper bars, covers, reinforcement guards, isolators, and mounting hardware.

Process should include

- inspecting, removing, and replacing bolted panel or panel assemblies
- inspecting and removing bumper bars, covers, reinforcement guards, isolators, and mounting hardware
- replacing/installing and aligning bumper bars, covers, reinforcement guards, isolators, and mounting hardware.

Remove and replace front fenders, headers, and other panels.

Process should include

- inspecting and removing front fenders, headers, and other panels
- replacing/installing and aligning front fenders, headers, and other panels
- diagnosing and repairing dust leaks and wind noise

Straighten damaged panels for body filling or metal finishing.

Process should include

- straightening and roughing-out contours of damaged panel to a surface condition for body filling or metal finishing, using power tools, hand tools, and stud welder
- removing all rust, paint, and dirt, using a suitable grit for the filler products to be used.

Restore sound deadeners and foam materials.

Restoration should include

- determining the material
- replacing to OEM (Original Equipment Manufacturer) specifications.

Demonstrate hammer and dolly techniques.

- Demonstration includes the selection of appropriate hammer and dolly according to damage and contour of panel to be repaired.

Explain procedures to replace window regulators, run channels, glass, power mechanisms, and related controls.

Explanation should include procedures for

- inspecting, adjusting, repairing, or replacing window regulators, run channels, glass, power mechanisms, and related controls
- inspecting, repairing, or replacing power-driven accessories and related controls (including electrically heated glass)
- removing and replacing components of electric door and hatch/trunk lock and checking operation
- removing and replacing components of keyless lock/unlock devices and alarm systems and checking operation
- checking operation of power side windows and power tailgate window
- diagnosing and repairing water leaks, dust leaks, and wind noises and inspecting, repairing, and replacing weather stripping.

Repair or replace removable roof panel and hinges, latches, guides, handles, retainer, and controls of sunroofs.

Process should include

- inspecting and repairing/replacing removable manually operated roof panel
- inspecting and repairing/replacing removable power-operated roof panel
- checking tracks or channels
- checking fuses, switches, and other electrical components (in power-operated panels).

Replace or repair rigid, semi-rigid, and flexible plastic panels.

- Replacement and repair should be completed to manufacturer's and industry specifications. Type of materials and amount of damage should determine the procedure for panel repair. Affected area should be properly prepared (panel supports may need to be straightened or aligned, and repair area should be sanded, textured, cleaned, and primed) prior to painting.

Notes to Instructors

None