

**WARREN COUNTY SCHOOL DISTRICT**  
**PLANNED INSTRUCTION**

**COURSE DESCRIPTION**

**Course Title:** Auto Collision Technology

**Course Number:** 00901 AM 00951 PM

**Course Prerequisites:** Students must complete all credits for 9th grade

**Course Description:**

**47.0603 Auto/Automotive Body Repairer**

An instructional program that prepares individuals to apply technical knowledge and skills to repair damaged automotive vehicles such as automobiles and light trucks. Students learn to examine damaged vehicles and estimate cost of repairs; remove, repair and replace upholstery, accessories, electrical and hydraulic window and seat operating equipment and trim to gain access to vehicle body and fenders; remove and replace glass; repair dented areas; replace excessively damaged fenders, panels and grills; straighten bent frames or unibody structures using hydraulic jacks and pulling devices; and file, grind and sand repaired surfaces using power **tools and hand tools. Students refinish repaired surfaces by painting with primer and finish coat.**

**Suggested Grade Level:** 10-12

**Length of Course:** 3 years

**Three periods per day (120 Min) – Five Days per week – Three years**

**Units of Credit:** 3 credits per year

*PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certification(s) (Insert certificate title and CSPG#)*

**Vocational-Intern/ Instructional 2600 Vocational-Instructional (non-degree program) Automotive Body & Fender 2005 Automotive Body Repair**

**Certification verified by WCSD Human Resources Department:** X Yes

**Board Approved Textbooks, Software, Materials:**

**Title:** Currently using; **I-CAR**

**BOARD APPROVAL:**

**Date Written:** February 2010

**Date Approved:** April 12, 2010

**Implementation Year:** 2010-2011

## **Supplemental Materials and supplies and Programs:**

Currently using; SP2 safety program for students, Video Competency Assessment equipment

Complete Tools List-[http://www.natef.org/program\\_standards/collision.cfm](http://www.natef.org/program_standards/collision.cfm)

## **Course Standards**

### **PA Academic Standards: (Numbers in RED are Duty Task Headings listed below)**

- 1.1.11. Learning to Read Independently**  
**(400-1900)**
- 1.2.11. Reading Critically in All Content Areas**  
**(400-900)**
- 1.6.11. 1.6. Speaking and Listening**  
**(3100)**
- 2.2.11. Computation and Estimation**  
**(200,400, 700, 800, 1000, 1600, 2000, 2100, 2700, 2800)**
- 2.3.11. Measurement and Estimation**  
**(400 – 700, 1000, 1100, 1300-1500, 1900, 2600, 3000, 3100)**
- 2.5.11. Mathematical Problem Solving and Communication**  
**(400)**
- 3.1.10. Unifying Themes**  
**(1000, 1100, 2000)**
- 3.7.10. Technological Devices**  
**(200, 400-800, 1000, 2800)**
- 3.7.12. Technological Devices**  
**(200, 400-700, 1000, 2800)**

### **PA Anchors (Numbers in RED are Duty Task Headings listed below)**

- R11.A.1.1.1 Identify and/or apply meaning of multiple-meaning words used in text.**  
**(1500)**
- R11.A.1.2.2 Define and/or apply how the meaning of words or phrases changes when using context clues given in explanatory sentences.**  
**(1200, 1300)**
- R11.A.2.1.1 Identify and/or apply meaning of multiple-meaning words used in text.**  
**(100, 2700)**
- R11.A.2.1.2 Identify and/or apply meaning of content-specific words used in text.**  
**(300, 600, 800, 2200, 2800, 3000)**
- R11.A.2.2.2 Define and/or apply how the meaning of words or phrases changes when using context clues given in explanatory sentences.**  
**(300, 2200, 2300)**

- R11.A.2.3.1** Make inferences and/or draw conclusions based on information from text.  
**(200, 400-2100, 2700)**
- R11.A.2.3.2** Cite evidence from text to support generalizations.  
**(300, 500, 600, 800, 2000, 2300, 2600, 2700)**
- R11.A.2.4.1** Identify and/or explain stated or implied main ideas and relevant supporting details from text.  
**(300, 600, 800, 900, 1500, 1900, 2200)**
- R11.A.2.6.1** Identify and/or describe the author's intended purpose of text.  
**(900, 1500)**
- R11.B.1.2.1** Explain, interpret, compare, describe, analyze, and/or evaluate connections between text.  
**(900)**
- R11.B.3.3.3** Explain, interpret, and/or analyze graphics and charts, and/or make connections between text and the content of graphics and charts.  
**(500, 600, 1000, 2000, 2200, 2700)**
- R11.B.3.3.4** Identify, explain, compare, interpret, describe, and/or analyze the sequence of steps in a list of directions.  
**(300, 500, 600, 800, 900, 1900, 2000, 2200, 2600, 3400)**
- M11.A.1.1.1** Find the square root of an integer to the nearest tenth using either a calculator or estimation.  
**(1200, 1800)**
- M11.A.1.3.2** Compare and/or order any real numbers (rational and irrational may be mixed).  
**(1000, 1200, 1500, 2000)**
- M11.A.2.1.1** Solve problems using operations with rational numbers including rates and percents (single and multi-step and multiple procedure operations) (e.g., distance, work and mixture problems, etc.).  
**(200, 400, 600, 700, 800, 1000, 1400, 1500, 1600, 2600)**
- M11.A.2.1.3** Identify and/or use proportional relationships in problem solving settings.  
**(600, 2000, 2600, 3000)**
- M11.A.3.1.1** Simplify/evaluate expressions using the order of operations to solve problems (any rational numbers may be used).  
**(400, 800, 2800)**
- M11.A.3.2.1** Use estimation to solve problems..  
**(400, 2800)**
- M11.B.2.2.3** Estimate area, perimeter or circumference of an irregular figure.  
**(700)**
- M11.B.2.2.4** Find the measurement of a missing length given the perimeter, circumference, area or volume.  
**(600)**
- M11.B.2.3.1** Describe how a change in the linear dimension of a figure affects its perimeter, circumference, area or volume.  
**(1000)**
- S11.A.1.1.1** Compare and contrast scientific theories, scientific laws, and beliefs (e.g., the universal law of gravitation, how light travels, formation of moons, stages of ecological succession).  
**(700)**
- S11.A.2.2.1** Evaluate appropriate methods, instruments, and scale for precise quantitative and qualitative observations (e.g., to compare properties of materials, water quality).  
**(1000)**

**WCSD Academic Standards:**

Aligned with PA Standards

**Industry or Other Standards:** (List, Identify Source or None)

Currently using; SP2 Safety, ASE, I-CAR

**SPECIAL EDUCATION AND GIFTED REQUIREMENTS**

The teacher shall make appropriate modifications to instruction and assessment based on a student’s Individual Education Plan (IEP) or Gifted Individual Education Plan (GIEP).

**SPECIFIC EDUCATIONAL OBJECTIVES/CORRESPONDING STANDARDS  
AND ELIGIBLE CONTENT WHERE APPLICABLE**

(List Objectives, PA Standards #'s, Other Standards (see samples at end))

See “Standards” and “Anchors” above

**ASSESSMENTS**

**PSSA Assessment Anchors Addressed:** The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at [pde@state.pa.us](mailto:pde@state.pa.us).

**Formative Assessments:** The teacher will develop and use standards-based assessments throughout the course.

**Portfolio Assessment:**  Yes  No

**District-wide Final Examination Required:**  Yes  No

**Course Challenge Assessment (Describe):**

1. Instructor approved Portfolio
2. Advanced grade on Collision Repair & Refinishing NOCTI Written Exam
3. Advanced grade on Collision Repair & Refinishing NOCTI Performance Exam

## REQUIRED COURSE SEQUENCE AND TIMELINE

(Content must be tied to objectives)

Content Sequence	Dates
100 ORIENTATION	Week 1-2
200 SAFETY	Week 1-108
300 PRINCIPLES OF DESIGN AND CONSTRUCTION	Week 3-4
400 NON-STRUCTURAL REPAIR – PREPARATION	Week 5-6
500 PANEL REPLACEMENT AND ALIGNMENT	Week 7-8
600 WORKING WITH TRIM AND HARDWARE	Week 9-11
700 METAL STRAIGHTENING	Week 12
800 USING BODY FILLERS	Week 13-108
900 MOVEABLE GLASS AND HARDWARE	Week 14
1000 STRUCTURAL REPAIR - DAMAGE ANALYSIS	Week 15-17
1100 STRAIGHTENING STRUCTURAL PARTS	Week 18-108
1200 FULL OR PARTIAL PANEL REPLACEMENT	Week 19-50
1300 STATIONARY GLASS REPLACEMENT	Week 51-53
1400 RESTORING CORROSION PROTECTION	Week 54-60
1500 WELDING AND CUTTING - MIG (GMAW) WELDING	Week 61-85
1600 CUTTING AND HEATING PROCESSES	Week 86-87
1700 REFINISHING - SAFETY AND ENVIRONMENTAL PRACTICES	Week 1-108
1800 UNDERSTANDING AUTOMOTIVE FINISHES	Week 88-89
1900 PREPARING THE SURFACE FOR REFINISHING	Week 1-108
2000 PREPARING EQUIPMENT, PAINT AREA, AND REF.MTLS.	Week 90-91
2100 TINTING	Week 92
2200 APPLYING THE FINISH	Week 93-94
2300 BLENDING	Week 95
2400 SOLVING PAINT APPLICATION PROBLEMS	Week 95-96
2500 FINISH DEFECTS: CAUSES AND CURES	Week 95-96
2600 DETAILING	Week 1-108
2700 ESTIMATING - ANALYZING DAMAGE	Week 97-98
2800 CREATING A DAMAGE REPORT MANUALLY	Week 99
2900 PLASTIC REPAIR - IDENTIFICATION AND REPAIR DECISIONS	Week 100
3000 ADHESIVE REPAIR, PLASTIC	Week 100-102
3100 WELDING REPAIRS, PLASTIC	Week 102
3200 MECHANICAL AND ELEC. REPAIR - STEERING AND SUSP.	Week 103-104
3300 ELECTRICAL AND ELECTRONIC SYSTEMS	Week 105
3400 BRAKE SYSTEMS	Week 106
3500 HEATING and AIR CONDITIONING	Week 106
3600 DRIVE TRAINS	Week 107
3700 FUEL, INTAKE AND EXHAUST SYSTEMS	Week 107
3800 RESTRAINT SYSTEMS	Week 108

**Objectives:**

**Auto body/Collision and Repair Technology/Technician  
CIP 47.0603  
Task Grid**

LEA Task # Alignment

**Competency Task List**

**H – Highly Skilled, M – Moderately Skilled, L – Limited Skills, N – Not Applicable**

**100 ORIENTATION**

101 Identify opportunities in the auto body field.	H	M	L	N
102 Identify basic auto body construction.	H	M	L	N
103 Identify program rules and policies.	H	M	L	N
104 Identify government agencies regulating the auto collision industry.	H	M	L	N

**200 SAFETY**

201 Establish general shop safety.	H	M	L	N
202 Demonstrate proper use of personal safety devices and clothing.	H	M	L	N
203 Locate and identify fire extinguishers.	H	M	L	N
204 Locate and operate emergency switches.	H	M	L	N
205 Explain fire and tornado drill procedures.	H	M	L	N
206 Describe proper handling of vehicles in the shop.	H	M	L	N
207 Demonstrate proper handling of hazardous materials.	H	M	L	N
208 Identify proper chemical disposal techniques.	H	M	L	N
209 Operate shop and spray area ventilation systems properly.	H	M	L	N
210 List rules for care and safe use of hand tools.	H	M	L	N
211 Demonstrate safe and proper use of power and hydraulic tools.	H	M	L	N
212 Demonstrate safe and proper use of air powered tools.	H	M	L	N
213 Demonstrate safe use and maintenance of electric, pneumatic and hydraulic equipment.	H	M	L	N
214 Demonstrate the use of proper jacking and lifting points on a full frame vehicle.	H	M	L	N
215 Demonstrate the use of proper jacking and lifting points on a uni-body vehicle.	H	M	L	N
216 Identify the proper methods and options for safely moving vehicles in the shop area.	H	M	L	N
217 Identify information on MSDS sheets.	H	M	L	N

**300 PRINCIPLES OF DESIGN AND CONSTRUCTION**

301 List the differences between a unibody vehicle and a full frame vehicle.	H	M	L	N
302 Describe major advantages of a unibody vehicle.	H	M	L	N
303 Identify front body panels of a unibody vehicle.	H	M	L	N
304 Identify underbody panels of a unibody vehicle.	H	M	L	N
305 Identify side body panels of a unibody vehicle.	H	M	L	N
306 Identify rear body panels of a unibody vehicle.	H	M	L	N
307 Identify vehicles by V.I.N. number (vehicle identification number).	H	M	L	N
308 Identify various substrates.	H	M	L	N

## **400 NON-STRUCTURAL REPAIR - PREPARATION**

401 Use hand and power equipment.	H	M	L	N
402 Prepare an estimate/repair sequence.	H	M	L	N
403 Remove dirt, grease, wax, and corrosion protection.	H	M	L	N
404 Protect panels and adjacent parts to the repair area.	H	M	L	N

## **500 PANEL REPLACEMENT AND ALIGNMENT**

501 Use panel replacement and alignment tools.	H	M	L	N
502 Select and repair fasteners.	H	M	L	N
503 Install panels using various alignment methods (weld, bolt).	H	M	L	N
504 Remove and install bumper, fascia, and header panels.	H	M	L	N
505 Remove, reinstall, and align hoods, deck lids, and hatches.	H	M	L	N
506 Remove, reinstall, and align fenders, doors, and tailgates.	H	M	L	N

## **600 WORKING WITH TRIM AND HARDWARE**

601 Identify the types of Fasteners.	H	M	L	N
602 Remove and replace belt molding and trim.	H	M	L	N
603 Remove and replace adhesive-held molding and trim.	H	M	L	N
604 Locate and drill holes for molding and trim.	H	M	L	N
605 Identify interior components and trim.	H	M	L	N
606 Remove and replace seats.	H	M	L	N
607 Remove and reinstall seat belt components.	H	M	L	N
608 Remove and reinstall carpeting.	H	M	L	N
609 Remove and reinstall dash assembly.	H	M	L	N
610 Identify, inspect, and disarm supplemental restraint systems.	H	M	L	N
611 Diagnose supplemental restraint systems.	H	M	L	N
612 Replace supplemental restraint systems.	H	M	L	N
613 Use trim removal tools.	H	M	L	N
614 Remove and install interior door panel.	H	M	L	N
615 Remove and install door lock and handle assembly.	H	M	L	N
616 Remove and install decklid lock cylinders.	H	M	L	N
617 Remove and install exterior trim and moldings.	H	M	L	N
618 Remove and install pinstripes, decals, and emblems.	H	M	L	N

## **700 METAL STRAIGHTENING**

701 Use metal straightening tools.	H	M	L	N
702 Straighten damaged metal.	H	M	L	N
703 Shrink stretched metal.	H	M	L	N
704 Use weld-on nail gun to repair sheet metal.	H	M	L	N

## **800 USING BODY FILLERS**

801 Select correct body filler and tools.	H	M	L	N
802 Prepare surface for body filler.	H	M	L	N
803 Prepare and apply body filler.	H	M	L	N
804 Prepare and apply specialty fillers (fiberglass, aluminum, and polyester).	H	M	L	N
805 Finish body fillers.	H	M	L	N
806 Apply corrosion protection according to manufacturer's specifications.	H	M	L	N

## **900 MOVEABLE GLASS AND HARDWARE**

- |  |   |   |   |   |
|--|---|---|---|---|
| 901 Remove and replace a door regulator. | H | M | L | N |
| 902 Reinstall moveable door glass.       | H | M | L | N |

## **1000 STRUCTURAL REPAIR - DAMAGE ANALYSIS**

- |   |   |   |   |   |
|---|---|---|---|---|
| 1001 Classify the various types and extent of damage a vehicle sustains from an accident. | H | M | L | N |
| 1002 Select and interpret body dimension specification sheets and/or manuals.             | H | M | L | N |
| 1003 Set up and use tram gauge to diagnose vehicle length and width damage.               | H | M | L | N |
| 1004 Diagnose centerline misalignment using centering gauges.                             | H | M | L | N |
| 1005 Explain how to diagnose vehicle height damage with datum line gauges.                | H | M | L | N |
| 1006 Identify aspects of universal measuring system.                                      | H | M | L | N |
| 1007 Identify aspects of dedicated measuring system.                                      | H | M | L | N |

## **1100 STRAIGHTENING STRUCTURAL PARTS**

- |   |   |   |   |   |
|---|---|---|---|---|
| 1101 Demonstrate knowledge to mount and anchor vehicle to a pulling system. | H | M | L | N |
| 1102 Demonstrate knowledge of working with High Strength Steel (HSS).       | H | M | L | N |
| 1103 Demonstrate knowledge of cold and hot stress relief methods.           | H | M | L | N |
| 1104 Remove and reinstall mechanical components.                            | H | M | L | N |

## **1200 FULL OR PARTIAL PANEL REPLACEMENT**

- |   |   |   |   |   |
|---|---|---|---|---|
| 1201 Identify the principles of full or partial panel replacement.                | H | M | L | N |
| 1202 Select and understand the use of various types of joints used in sectioning. | H | M | L | N |
| 1203 Weld and adhesively bond panel replacement.                                  | H | M | L | N |
| 1204 Replace Bonded door panels.  | H | M | L | N |
| 1205 Remove and replace bumpers, steel and aluminum.                              | H | M | L | N |
| 1206 Remove and replace energy absorbers.   | H | M | L | N |
| 1207 Remove and replace fascia covers.  | H | M | L | N |
| 1208 Apply corrosion protection.  | H | M | L | N |

## **1300 STATIONARY GLASS REPLACEMENT**

- |   |   |   |   |   |
|---|---|---|---|---|
| 1301 Identify and select different types of automotive glass.               | H | M | L | N |
| 1302 Operate stationary glass removal tools.                                | H | M | L | N |
| 1303 Remove stationary glass.   | H | M | L | N |
| 1304 Identify the properties and characteristics of adhesives and sealants. | H | M | L | N |
| 1305 Install stationary glass.  | H | M | L | N |

## **1400 RESTORING CORROSION PROTECTION**

- |  |   |   |   |   |
|--|---|---|---|---|
| 1401 Identify corrosion principles and factory corrosion protection. | H | M | L | N |
| 1402 Identify repair methods and materials for corrosion protection. | H | M | L | N |
| 1403 Protecting enclosed interior surfaces.                          | H | M | L | N |
| 1404 Protecting weld areas and exposed seams.                        | H | M | L | N |
| 1405 Protecting exposed interior surfaces.                           | H | M | L | N |
| 1406 Protecting exposed exterior surfaces, trim, and accessories.    | H | M | L | N |

## **1500 WELDING AND CUTTING - MIG (GMAW) WELDING**

1501 Explain the differences between welding, soldering, and brazing.	H	M	L	N
1502 Demonstrate personal safety practices and vehicle protection measures.	H	M	L	N
1503 Set up the Mig welder.	H	M	L	N
1504 Make a weld and tune the welder.	H	M	L	N
1505 Complete a butt joint with backing in various welding positions.	H	M	L	N
1506 Complete a fillet weld lap joint.	H	M	L	N
1507 Complete a plug weld in various positions.	H	M	L	N
1508 Perform destructive tests.	H	M	L	N
1509 Demonstrate welding of high strength steel.	H	M	L	N

## **1600 CUTTING AND HEATING PROCESSES**

1601 Identify cutting processes.	H	M	L	N
1602 Demonstrate sheet metal cutting processes.	H	M	L	N
1603 Set up and use plasma arc cutters.	H	M	L	N

## **1700 REFINISHING - SAFETY AND ENVIRONMENTAL PRACTICES**

1701 Explain various environmental regulations and other items regulated in an automotive refinishing department.	H	M	L	N
1702 Locate hazardous warning information.	H	M	L	N
1703 Select and inspect personal safety equipment and clothing needed for protection during refinishing operations.	H	M	L	N
1704 Demonstrate safe painting practices and use of protective clothing equipment.	H	M	L	N
1705 Identify personal health and safety hazards according to OSHA guideline.	H	M	L	N

## **1800 UNDERSTANDING AUTOMOTIVE FINISHES**

1801 Describe the difference between paint systems and why the materials are applied by the manufacturer.	H	M	L	N
1802 Describe paint defects - causes and cures.	H	M	L	N
1803 Identify and demonstrate use of refinishing equipment.	H	M	L	N
1804 Identify topcoats and demonstrate application procedures.	H	M	L	N

## **1900 PREPARING THE SURFACE FOR REFINISHING**

1901 Demonstrate proper steps to pre-wash entire vehicle.	H	M	L	N
1902 Chemically and mechanically remove paint finish when necessary.	H	M	L	N
1903 Dry sand and featheredge areas.	H	M	L	N
1904 Wet sand and featheredge areas.	H	M	L	N
1905 Apply suitable metal treatments.	H	M	L	N
1906 Identify the color of paint on vehicle with use of paint catalogs.	H	M	L	N
1907 Apply undercoats.	H	M	L	N
1908 Use a block sander.	H	M	L	N
1909 Prepare panels for blending.	H	M	L	N
1910 Apply caulking and seam sealers.	H	M	L	N
1911 Apply chip-resistant coating.	H	M	L	N
1912 Mask a vehicle.	H	M	L	N

## **2000 PREPARING THE EQUIPMENT, PAINT AREA, AND REFINISH MATERIALS**

2001 Prepare the painting environment.	H	M	L	N
2002 Prepare and use the paint mixing area.	H	M	L	N
2003 Set up, test and adjust spray guns.	H	M	L	N
2004 Clean spray gun.	H	M	L	N

## **2100 TINTING**

2101 Tint and blend color coat.	H	M	L	N
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## **2200 APPLYING THE FINISH**

2201 Prepare surface for topcoat system.	H	M	L	N
2202 Apply primer-sealer.	H	M	L	N
2203 Apply single-stage finish.	H	M	L	N
2204 Apply basecoat/clearcoat finish.	H	M	L	N
2205 Apply tri-coat finish.	H	M	L	N
2206 Apply stone chip-resistant coating to lower body areas.	H	M	L	N

## **2300 BLENDING**

2301 Prepare an area for blending of the finish.	H	M	L	N
2302 Blend basecoat/clearcoat finish.	H	M	L	N

## **2400 SOLVING PAINT APPLICATION PROBLEMS**

2401 Identify contaminants in the paint finish.	H	M	L	N
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## **2500 FINISH DEFECTS: CAUSES AND CURES**

2501 Identify paint film defects, causes and cures.	H	M	L	N
2502 Identify surface defects in finish.	H	M	L	N

## **2600 DETAILING**

2601 Remove overspray/perform final finishing.	H	M	L	N
2602 Clean exterior of vehicle.	H	M	L	N
2603 Clean interior of vehicle.	H	M	L	N
2604 Apply decals and stripes.	H	M	L	N
2605 Demonstrate wet sand and polishing techniques.	H	M	L	N
2606 Clean body openings.	H	M	L	N
2607 Clean exterior and interior glass surfaces.	H	M	L	N

## **2700 ESTIMATING - ANALYZING DAMAGE**

2701 Demonstrate usage of collision estimating guides.	H	M	L	N
2702 Identify vehicles using the vehicle identification number (V.I.N.).	H	M	L	N
2703 Identify different types of vehicle damage.	H	M	L	N
2704 Identify mechanical damage.	H	M	L	N
2705 Indicate repair and replace decisions.	H	M	L	N

## **2800 CREATING A DAMAGE REPORT MANUALLY**

2801 Demonstrate proper use of a collision estimating guide.	H	M	L	N
2802 Estimate parts and labor amounts.	H	M	L	N
2803 Create a damage report manually.	H	M	L	N

## **2900 PLASTIC REPAIR - IDENTIFICATION AND REPAIR DECISIONS**

2901 Identify plastic and perform tests to make repair decisions.	H	M	L	N
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## **3000 ADHESIVE REPAIR, PLASTIC**

3001 Demonstrate proper use of adhesive repair methods, tools, and materials.	H	M	L	N
3002 Prepare plastic surfaces for adhesive repair.	H	M	L	N
3003 Repair interior and exterior plastics with two-part adhesives, with and without reinforcement.	H	M	L	N
3004 Repair rigid plastic parts with urethane or epoxy adhesives.	H	M	L	N
3005 Repair flexible plastic parts with urethane or epoxy adhesives.	H	M	L	N
3006 Repair rigid plastic parts with urethane or epoxy adhesives and fiberglass reinforcements.	H	M	L	N
3007 Repair flexible plastic parts with urethane or epoxy adhesives and fiberglass reinforcements.	H	M	L	N

## **3100 WELDING REPAIRS, PLASTIC**

3101 Select and understand how to use plastic welding methods, tools, and materials.	H	M	L	N
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## **3200 MECHANICAL AND ELECTRICAL REPAIR - STEERING AND SUSPENSION**

3201 Replace wheels/tires.	H	M	L	N
3202 Identify steering and suspension system.	H	M	L	N
3203 Identify rear suspension system.	H	M	L	N
3204 Identify wheel alignment angles and measurements.	H	M	L	N
3205 Remove and reinstall suspension systems.	H	M	L	N
3206 Inspect, diagnose, and repair causes of tire wear patterns.	H	M	L	N
3207 Perform four-wheel alignment.	H	M	L	N

## **3300 ELECTRICAL AND ELECTRONIC SYSTEMS**

3301 Inspect and service batteries and battery cables.	H	M	L	N
3302 Inspect, test and replace fusible links, circuit breakers and fuses.	H	M	L	N
3303 Aim headlights using mechanical aiming equipment.	H	M	L	N

## **3400 BRAKE SYSTEMS**

3401 Identify brake components.	H	M	L	N
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## **3500 HEATING and AIR CONDITIONING**

3501 Identify parts of air conditioning systems.	H	M	L	N
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## **3600 DRIVE TRAINS**

3601 Identify major drive train components.	H	M	L	N
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### 3700 FUEL, INTAKE AND EXHAUST SYSTEMS

3701 Identify fuel intake and exhaust systems.

H M L N

### 3800 RESTRAINT SYSTEMS

3801 Identify, inspect, and disarm supplemental restraint systems.

H M L N

**WRITING TEAM:** James Young, Dan Passmore, James Mechling, Bob Smith

#### WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination?  Yes  No
2. Does this course issue a mark/grade for the report card?  Yes  No
3. Does this course issue a Pass/Fail mark?  Yes  No
4. Is the course mark/grade part of the GPA calculation?  Yes  No
5. Is the course eligible for Honor Roll calculation?  Yes  No
6. What is the academic weight of the course?  
 No weight/Non credit  Standard weight  
 Enhanced weight (Describe)