Unit/Standard Number	High School Graduation Years 2022, 2023 and 2024
	Autobody/Collision and Repair Technology/Technician **CIP 47.0603** **Task Grid**
	Secondary Competency Task List
100	**SAFETY**
101	Follow general shop safety rules.
102	Use of personal safety devices and clothing.
103	Locate and identify fire extinguishers.
104	Locate and operate emergency switches.
105	Explain fire and tornado drill procedures.
106	Demonstrate proper handling of hazardous materials.
107	Follow proper chemical disposal techniques.
108	Operate shop and spray area ventilation systems.
109	Identify and follow rules for care and safe use of hand tools.
110	Identify and demonstrate safe and proper use of power tools and equipment.
111	Identify the proper methods and options for safely moving vehicles in the shop area.
112	Identify information on Safety Data Sheets (SDS).
113	Demonstrate the ability to secure vehicles on jack stands and/or hydraulic lifts.
160	Describe the objectives of the course
161	Describe competency based vocational education
162	Describe the learning guides
163	Describe evaluation and grading procedures
164	Identify importance of good attendance/punctuality
165	Describe appropriate attitudes toward work
166	Describe role of productive citizenship
167	Describe impact of changing technology
168	Describe student organizations and requirements
169	Identify and utilize effective work habits with new task
170	Identify and apply standards of performance or quality of work
200	**VEHICLE DESIGN AND CONSTRUCTION**
201	Identify the differences between various vehicle construction types.
202	Identify and describe structural and nonstructural panels of a unibody vehicle.
203	Determine the various materials used in vehicle construction.

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	Autobody/Collision and Repair Technology/Technician **CIP 47.0603** **Task Grid**
300	**PANEL REPLACEMENT AND ALIGNMENT**
301	Identify the principles of full or partial panel replacement (bonded, bolted, welded, or riveted).
302	Remove, reinstall, and align bolt on panels.
303	Remove and reinstall wheel/tire assembly.
304	Aim headlights using mechanical aiming equipment.
305	RESERVED
360	Inspect, remove, store, and replace non-structural body panels and components that may interfere with or be damaged during repair.
361	Remove corrosion protection, undercoating's, sealers, and other protective coatings necessary to perform repairs.
362	Inspect, remove, and replace repairable plastics and other components that are recommended for off-vehicle repair.
363	Determine the extent of direct and indirect damage and direction of impact; develop and document a repair plan,
364	Determine the extent of damage to aluminum body panels; repair or replace.
365	Weld damaged or torn steel body panels; repair broken welds.
366	Replace door skins.
367	Restore sound deadeners and foam materials.
368	Restore sealers, mastic, sound deadeners, and foam fillers
369	Diagnose and repair water leaks, dust leaks, and wind noise.
400	**TRIM AND HARDWARE**
401	RESERVED
402	Determine types of fasteners.
403	Remove and replace adhesive-held molding and trim.
404	Remove and install seats.
405	RESERVED
406	Remove and install interior parts and hardware.
407	Remove and install exterior parts and hardware.
408	Remove and install exterior trim, moldings, and emblems.
500	**METAL FINISHING**
501	Select proper metal straightening tools.
502	Evaluate stretched metal for repair.

Unit/Standard Number	High School Graduation Years 2022, 2023 and 2024
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid
503	Demonstrate weld-on nail gun to repair sheet metal.
504	Repair metal to meet industry standards.
505	Explain the characteristics of aluminum repair and tools required.
600	**BODY FILLERS**
601	Select correct body filler and tools.
602	Prepare surface for body filler.
603	Mix and apply body filler.
604	Sand body fillers to correct contour.
660	Remove paint from the damaged area of a body panel.
661	Prepare and apply speciality fillers (fiberglass, aluminum, and polyester).
700	**GLASS AND HARDWARE**
701	Remove and reinstall a door window regulator.
702	Remove and reinstall moveable door glass.
703	Describe the removal and replacement of stationary glass.
760	Diagnose and repair water leaks, dust leaks, and wind noises; inspect, repair, and replace weather-stripping.
761	Inspect, repair or replace, and adjust removable, manually or power operated roof panel and hinges, latches, guides, handles, retainer, and controls of sunroofs.
762	Inspect, remove, reinstall, and align convertible top and related mechanisms.
800	**STRUCTURAL COMPONENT REPAIR AND DAMAGE ANALYSIS**
801	Classify the various types structural damage a vehicle can sustain.
802	Interpret body dimension specifications.
803	Use a tram gauge to diagnose vehicle length and width damage and X measurements of body or frame.
804	Diagnose vehicle height with datum line gauges.
805	Identify various measuring systems.
806	Identify repair methods for vehicle with diamond damage, twist, sag side swag, or mash.
860	Analyze and identify misaligned or damaged steering, suspension, and power train components that can cause vibration, steering, and chassis alignment problems.
861	Realign or replace misaligned or damaged steering, suspension, and power train components that can cause vibration, steering and chassis alignment problems.

Unit/Standard Number	High School Graduation Years 2022, 2023 and 2024 **Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid**
862	Diagnose and measure unibody damage using tram and self-centering gauges.
863	Determine the extent of the direct and indirect damage and the direction of impact; plan and document the methods and sequence of repair.
864	Restore corrosion protection to repaired or replaced unibody structural areas.
865	Determine the extent of damage to aluminum structural components; repair, weld, or replace.
900	**STRUCTURAL STRAIGHTENING**
901	Mount and anchor vehicle to a pulling system.
902	Measure vehicle structure and analyze data.
903	Interpret data to make a structural pull back to factory specs.
960	Remove and replace damaged structural components.
961	Restore corrosion protection to repaired or replaced frame areas.
962	Analyze and identify misaligned or damaged steering, suspension, and power train components that can cause vibration, steering, and wheel alignment problems.
963	Align or replace misaligned or damaged steering, suspension, and power train components that can cause vibration, steering, and wheel alignment problems.
964	Identify heat limitations in structural components.
965	Restore structural foam.
966	Determine the extent of the direct and indirect damage and the direction of impact; document the methods and sequence of repair.
967	Analyze and identify crush/collapse zones.
1000	**CORROSION PROTECTION**
1001	Identify corrosion causes and OEM corrosion protection.
1002	Apply repair methods for corrosion protection.
1003	RESERVED
1004	Demonstrate the application of seam sealers.
1100	**WELDING**
1101	Identify different methods of attaching components (MIG welding, squeeze type resistance spot welding (STRSW), structural adhesive, silicon bronze, etc.)
1102	Demonstrate personal safety practices.
1103	Set up and tune the MIG welder.

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	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid
1104	Complete a butt joint with backing in various welding positions.
1105	Complete an overlap weld in various positions.
1106	Complete a plug weld in various positions.
1107	Define protection of adjacent panels, glass, vehicle interior, etc. from welding and cutting operations.
1160	Identify weldable and non-weldable materials used in collision repair.
1161	Weld and cut aluminum.
1162	Determine the correct GMAW (MIG) welder type, electrode, wire type, diameter, and gas to be used in a specific welding situation.
1163	Store, handle, and install high-pressure gas cylinders.
1164	Determine work clamp (ground) location and attach.
1165	Use the proper angle of the gun to the joint and direction of gun travel for the type of weld being made in the flat, horizontal, vertical, and overhead positions.
1166	Protect adjacent panels, glass, vehicle interior, etc. from welding and cutting operations.
1167	Protect computers and other electronic control modules during welding procedures.
1168	Clean and prepare the metal to be welded, assure good metal fit-up, apply weld-through primer if necessary, and clamp as required.
1169	Determine the joint type (butt weld with backing, lap, etc.) for weld being made.
1170	Determine the type of weld (continuous, butt weld with backing, plug, etc.) for each specific welding operation.
1171	Identify the causes of various welding defects; make necessary adjustments.
1172	Identify cause of contact tip burn-back and failure of wire to feed; make necessary adjustments.
1173	Identify cutting process for different materials and locations; perform cutting operation.
1174	Identify different methods of attaching structural components (squeeze type resistant spot welding (STRSW), riveting, structural adhesive, silicon bronze, etc.).
1200	**CUTTING PROCESSES**
1201	Identify cutting processes.
1202	Demonstrate sheet metal cutting processes.
1260	Set up and use plasma arc cutters
1300	**REFINISHING, AND EQUIPMENT SAFETY**
1301	Explain various environmental regulations.
1302	Locate hazardous warning information.
1303	Select and inspect personal protection equipment (PPE).
1304	Demonstrate safe painting practices.

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	Autobody/Collision and Repair Technology/Technician **CIP 47.0603** **Task Grid**
1305	Identify personal health and safety hazards.
1360	Check and adjust spray gun operation for HVLP (high volume, low pressure) or LVLP (low volume, low pressure) guns.
1361	Determine type and color of paint already on vehicle by manufacturer's vehicle information label.
1362	Shake, stir, reduce, catalyze/activate, and strain paint.
1363	Apply finish using appropriate spray techniques (gun arc, gun angle, gun distance, gun speed, and spray pattern overlap) for the finish being applied.
1364	Apply selected product on test and let-down panel; check for color match.
1365	Identify and mix paint using a formula.
1366	Identify poor hiding colors; determine necessary action.
1400	**AUTOMOTIVE FINISHES**
1401	Describe the difference between paint systems.
1402	Describe paint defects - causes and cures.
1403	Identify various undercoats.
1404	Identify various topcoats (single stage, basecoat/clearcoat, tricoat, quadcoat).
1460	Denib, buff, and polish finishes where necessary.
1461	Refinish rigid, semi-rigid, and flexible plastic parts.
1500	**SURFACE PREPARATION**
1501	Demonstrate proper steps to pre-wash entire vehicle.
1502	Use wax and grease remover.
1503	Demonstrate proper use of sanding and featheredging techniques.
1504	Wet, sand, and featheredge.
1505	RESERVED
1506	Locate and obtain the vehicle paint code.
1507	Apply undercoats.
1508	Prepare panels for blending.
1509	RESERVED
1510	Identify masking materials.
1511	Perform masking.
1512	Select the appropriate abrasive.

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	Autobody/Collision and Repair Technology/Technician **CIP 47.0603** **Task Grid**
1600	**REFINISHING EQUIPMENT AND PAINT AREA**
1601	Operate the spray booth.
1602	Maintain the paint mixing area.
1603	Set up, test, and adjust spray guns.
1604	Inspect, clean, and determine conditions of spray guns and equipment.
1605	Select and use the National Institution of Safety and Health (NIOSH) approved personal painting/refinishing respirator system.
1660	Select and use the NIOSH approved personal sanding respirator. Inspect condition and ensure fit and operation. Perform proper maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation.
1661	Select and use the NIOSH approved (Fresh Air Make-up System) personal painting/refinishing respirator system. Perform proper maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation.
1662	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.)
1700	**REFINISHING OPERATIONS**
1701	Prepare surface for topcoat system (degrease and tack).
1702	Apply primer-sealer.
1703	Apply single-stage finish.
1704	Apply basecoat/clearcoat finish.
1705	Describe the application of stone chip-resistant coating to lower body areas.
1706	Demonstrate paint manufacturer's mixing ratio when preparing paint products.
1760	Inspect, remove, store, and replace exterior trim and components necessary for proper surface preparation.
1761	Inspect and identify substrate, type of finish, surface condition, and film thickness; develop and document a plan for refinishing using a total product system.
1762	Dry or wet sand areas to be refinished.
1763	Mix primer, primer-surface or primer-sealer.
1764	Apply two-component finishing filler to minor surface imperfections.
1765	Dry or wet sand area to which primer-surfacer has been applied.
1766	Dry sand area to which two-component finishing filler has been applied.
1767	Remove dust from area to be refinished, including cracks or moldings of adjacent areas.
1768	Clean area to be refinished using a final cleaning solution.
1769	Remove, with a tack rag, any dust or lint particles from the area to be refinished.
1770	Identify the types of rigid, semi-rigid or flexible plastic parts to be refinished; determine the materials, preparation, and refinishing procedures.

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1771	Identify aluminum parts to be refinished; determine the materials, preparation, and refinishing procedures.
1800	**BLENDING OPERATIONS**
1801	RESERVED
1802	Blend basecoat/clearcoat finish.
1803	Tint and blend color coat.
1860	Identify alternative color formula to achieve a blendable match.
1900	**DETAILING**
1901	Remove overspray.
1902	Clean exterior of vehicle.
1903	Clean interior of vehicle.
1904	Apply decals and stripes.
1905	Demonstrate color sanding and polishing techniques.
1906	Clean body openings.
1907	Clean exterior and interior glass surfaces.
2000	**ESTIMATING DAMAGE ANALYSIS**
2001	Identify vehicle by vehicle identification number (VIN).
2002	Collect vehicle and customer data.
2003	Use collision estimating guides/estimating software.
2004	Identify different types of vehicle damage (direct and indirect).
2005	Indicate repair and replace decisions.
2006	Prepare an estimate/repair and sequence/calculate repair costs/supplements.
2007	Explain the need for a pre-repair scan and post-repair scan of the vehicle computer.
2060	Describe the collision repair estimate
2061	Identify vehicle
2062	Identify the different types of damage
2063	Planning damage repairs
2064	Analyze Damage
2065	Analyze mechanical damage

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2066	Repairing or replacing decision making
2067	Identifying different computer estimating systems
2068	Interpreting computer estimates
2069	Create a computerized estimate
2100	**PLASTIC REPAIR**
2101	Identify plastic to make repair decisions.
2102	Use plastic repair methods (adhesives and welding).
2103	Repair plastics with two-part adhesives, with and without reinforcement.
2104	Research recommended repair processes for bumper cover repair on Advance Driver Assistance System (ADAS) vehicles.
2200	**RESTRAINT SYSTEMS**
2201	Research auto manufacturers' recommended safety procedures to prevent accidental deployment of supplemental restraint systems.
2202	Identify supplemental restraint systems.
2203	Remove and reinstall seat belt components.
2300	**Advanced Technology**
2301	Explain function and components of the Advance Driver Assistance System (ADAS).
2302	Describe precautions required when working on high voltage vehicles.
3000	**ELECTRICAL AND ELECTRONIC SYSTEMS**
3060	Inspect and service batteries and battery cables.
3061	Inspect, test, and replace fusible links, circuit breakers and fuses
3062	Repair electrical wiring and connectors.
3100	**HEATING AND AIR CONDITIONING**
3160	Identify and comply with environmental concerns relating to refrigerants and coolants.
3162	Identify and recover refrigerant from A/C system.
3163	Recycle refrigerant in accordance with EPA regulations.
3164	Identify, label, and store refrigerant.
3165	Evacuate A/C system; check for leaks.

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3166	Recharge A/C system with refrigerant; perform leak test.
3200	**STEERING AND SUSPENSION**
3260	Identify steering and suspension system
3261	Identify rear suspension system
3262	Identify wheel alignment angles and measurements
3263	Identify tire wear pattern causes and cures
3264	Identify caster and camber
3300	**PROFESSIONAL DEVELOPMENT**
3360	Level 1 Self- Improvement, Training Degree.
3361	Level 2 Civic, Social and Business Awareness, Leader Degree Certification.
3362	Level 3 Work Force Basics, Professional Degree.
3363	Level 4 Professional Strategies, Master Degree.
3364	Complete a resume
3365	Complete a job application
3366	Assemble an employment portfolio
3400	**LEADERSHIP**
3460	Joining a student Career and Technical Organization (SkillsUSA)
3461	Actively participate as a member of SkillsUSA
3462	Demonstrate knowledge of terms with SkillsUSA activities
3463	Participate in SkillsUSA ceremonies and assist in planning SkillsUSA activities.
3464	Plan a SkillsUSA business meeting
3465	Conduct a SkillsUSA business meeting using Parliamentary Procedure
3466	Demonstrate knowledge of a good SkillsUSA member and leader
4300	**COMPUTER APPLICATIONS / SOFTWARE**
4360	Use a spreadsheet (Microsoft Excel)
4361	Use the Paint Mixing software system
4362	Use the estimating computer software system

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4363	Use the SP/2 software system
4364	Use the Universal Measuring System software
4365	Use the computerized Laser Measuring software