



Auto Collision Repair

CIP 47.0603

PROGRAM OF STUDY

**CURRICULUM MAPPING
WITH
CERTIFICATION OUTCOMES**

Mon Valley Career & Technology Center prepares all students to attain their fullest potential for employment, to be life long learners, and to be productive and responsible members of an ever-changing society.

Objective:

This document has been prepared to project student learning outcomes in a linear fashion over the approved 3-year program of study.

Overview:

This document provides a Pennsylvania Department of Education and Mon Valley CTC Occupational Advisory Committee approved list of tasks and learning objectives that are broken out into a linear form for a better understanding of learning outcomes over a three-year period within each program. It also serves as curriculum map as students work towards completing knowledge and skill-based tasks in pursuit of industry credentials. The end goal within each program is to work towards completing all tasks at proficient and advanced levels, earning multiple (stackable) industry credentials, and successfully complete the NOCTI exam. Student's progression and completion of task(s) and industry certification(s) may vary.

Navigation:

Unit / Task # - This column indicates the Pennsylvania Department of Education or Mon Valley CTC local unit or task numbers given to each task within a given duty area.

Task Description – This column explains what knowledge-based or skill-based task that a student is working on for completion.

Level / Marking Period – This column indicates the learning level and timeframe at which the specific task(s) will be introduced to the student(s). Note that some tasks may be taught and completed individually while others may be taught in groups. (i.e. 1.1 would signify a first-year student being introduced to this task(s) in the first marking period, 2.3 would signify a second-year student being introduced to this task(s) in third marking period, etc.)

Industry Certification:

Students successfully progressing through the curriculum and tasks have opportunity to test for industry credentials. Industry credentials are listed on the right side of the document at the appropriate time within the curriculum that a student would be fully prepared to test for that certification.



Autobody / Collision and Repair Technology / Technician

Classification of Industrial Programs 47.0603

Unit / Task #	Task Description	Level / Marking Period
101	Follow general shop safety rules.	1.1
102	Use of personal safety devices and clothing.	1.1
103	Locate and identify fire extinguishers.	1.1
104	Locate and operate emergency switches.	1.1
105	Explain fire and tornado drill procedures.	1.1
106	Demonstrate proper handling of hazardous materials.	1.1
107	Follow proper chemical disposal techniques.	1.1
108	Operate shop and spray area ventilation systems.	1.1
109	Follow rules for care and safe use of hand tools.	1.1
110	Demonstrate safe and proper use of power tools and equipment.	1.1
111	Identify the proper methods and options for safely moving vehicles in the shop area.	1.1
112	Identify information on Safety Data Sheets (SDS).	1.1
501	Select proper metal straightening tools.	1.2
502	Evaluate stretched metal for repair.	1.2
503	Demonstrate weld-on nail gun to repair sheet metal.	1.2
504	Repair metal to meet industry standards.	1.2
601	Select correct body filler and tools.	1.2
602	Prepare surface for body filler.	1.2
603	Mix and apply body filler.	1.2
604	Sand body fillers to correct contour.	1.2

Certification test for:

SP/2 Automotive



1101	Identify different methods of attaching components (MIG welding, squeeze type resistance spot welding (STRSW) riveting, structural adhesive, silicon bronze, etc.)	1.2 - 1.4
1102	Demonstrate personal safety practices.	1.2 - 1.4
1103	Set up and tune the MIG welder.	1.2 - 1.4
1104	Complete a butt joint with backing in various welding positions.	1.2 - 1.4
1105	Complete an overlap weld in various positions.	1.2 - 1.4
1106	Complete a plug weld in various positions.	1.2 - 1.4
1107	Define protection of adjacent panels, glass, vehicle interior, etc. from welding and cutting operations.	1.2 - 1.4
1301	Explain various environmental regulations.	1.2
1302	Locate hazardous warning information.	1.2
1303	Select and inspect personal protection equipment (PPE).	1.2
1304	Demonstrate safe painting practices.	1.2
1305	Identify personal health and safety hazards.	1.2
1401	Describe the difference between paint systems.	1.2
1402	Describe paint defects - causes and cures.	1.2
1403	Identify various undercoats.	1.2
1404	Identify various topcoats (single stage, basecoat/clearcoat, tricoat, quadcoat).	1.2
1501	Demonstrate proper steps to pre-wash entire vehicle.	1.2
1502	Use wax and grease remover.	1.2
1503	Demonstrate proper use of sanding and featheredging techniques.	1.2
1504	Wet sand and featheredge.	1.2
1505	Apply suitable metal treatments.	1.2
1506	Obtain the vehicle paint code.	1.2
1507	Apply undercoats.	1.2
1508	Prepare panels for blending.	1.2
1510	Identify masking materials.	1.2
1511	Perform masking.	1.2

Certification test for:
I-CAR – Surface Preparation
and Masking



1512	Select the appropriate abrasive.	1.2
1601	Operate the spray booth.	1.2
1602	Maintain the paint mixing area.	1.2
1603	Set up, test and adjust spray guns.	1.2
1604	Inspect, clean, and determine conditions of spray guns and equipment.	1.2
1605	Select and use the National Institution of Safety and Health (NIOSH) approve personal painting/refinishing respirator systems.	1.2
1001	Identify corrosion causes and OEM corrosion protection.	1.3
1002	Apply repair methods for corrosion protection.	1.3
1004	Demonstrate the application of seam sealers.	1.3
1201	Identify cutting processes.	1.3
1202	Demonstrate sheet metal cutting processes.	1.3
1701	Prepare surface for topcoat system (degrease and tack).	1.3
1702	Apply primer-sealer.	1.3
1703	Apply single-stage finish.	1.3
1704	Apply basecoat/clearcoat finish.	1.3
1705	Describe the application of stone chip-resistant coating to lower body areas.	1.3
1802	Blend basecoat/clearcoat finish.	1.3
1803	Tint and blend color coat.	1.3
MVCTC	Task Remediation and Project Based Learning	1.4
201	Identify the differences between various vehicle construction types.	2.1
202	Identify and describe structural and nonstructural panels of a unibody vehicle.	2.1
203	Determine the various materials used in vehicle construction.	2.1
801	Classify the various types structural damage a vehicle can sustain.	2.1
802	Interpret body dimension specifications.	2.1
803	Use a tram gauge to diagnose vehicle length and width damage.	2.1
804	Diagnose vehicle height with datum line gauges.	2.1

Certification test for:
I-CAR - Refinishing
Equipment
Material Storage/Disposal,
Hazardous Airborne Pollutant
Reduction

Certification test for:
I-CAR - Intro to
Refinishing and Corrosion
Protection Parts 1 & 2

Certification test for:
I-CAR – Intro to Tools, Equip,
and Attachment Methods



805	Identify various measuring systems.	2.1
806	Identify repair methods for vehicle with diamond damage, twist, sag side swag or mash.	2.1
2001	Identify vehicle by VIN (vehicle identification number).	2.1
2002	Collect vehicle and customer data.	2.1
2003	Use collision estimating guides.	2.1
2004	Identify different types of vehicle damage (direct and indirect).	2.1
2005	Indicate repair and replace decisions.	2.1
2006	Prepare an estimate/repair sequence/calculate repair costs.	2.1
301	Identify the principles of full or partial panel replacement (bonded, bolted, or welded).	2.2
302	Remove, reinstall, and align bolt on panels.	2.2
303	Remove and reinstall wheel/tire assembly.	2.2
304	Aim headlights using mechanical aiming equipment.	2.2
901	Mount and anchor vehicle to a pulling system.	2.2
902	Prepare vehicle for measuring and analysis.	2.2
903	Prepare vehicle for structural alignment.	2.2
402	Determine types of fasteners.	2.3
403	Remove and replace adhesive-held molding and trim.	2.3
404	Remove and install seats.	2.3
406	Remove and install interior parts and hardware.	2.3
407	Remove and install exterior parts and hardware.	2.3
408	Remove and install exterior trim, moldings, and emblems.	2.3
2101	Identify plastic to make repair decisions.	2.3
2102	Use plastic repair methods (adhesives and welding).	2.3
2103	Repair plastics with two-part adhesives, with and without reinforcement.	2.3
MVCTC	Task Remediation and Project Based Learning	2.4
701	Remove and reinstall a door window regulator.	3.1
702	Remove and reinstall moveable door glass.	3.1

Certification test for:
I-CAR – Intro to Tools,
Equipment and Attachment
Methods

Certification test for:
I-CAR - Bolted-on
Exterior Panels Parts 1 & 2
Intro to Vehicle Parts 1 & 2

Certification test for:
I-CAR - Removing
and Installing Hardware
and Interior Trim



703	Describe the removal and replacement of stationary glass.	3.1
1901	Remove overspray.	3.1
1902	Clean exterior of vehicle.	3.1
1903	Clean interior of vehicle.	3.1
1904	Apply decals and stripes.	3.1
1905	Demonstrate color sanding and polishing techniques.	3.1
1906	Clean body openings.	3.1
1907	Clean exterior and interior glass surfaces.	3.1
2201	Research auto manufacturers' recommended safety procedures to prevent accidental deployment of supplemental restraint systems.	3.1
2202	Identify supplemental restraint systems.	3.1
2203	Remove and reinstall seat belt components.	3.1
MVCTC	Project Based Learning	3.2
MVCTC	Task Remediation / NOCTI Test Prep / I-CAR Certification Make-up Tests	3.3 - 3.4