STRANDS AND STANDARDS

BASIC AUTOMOTIVE COLLISION REPAIR

Learning that works for Utah
CTE®

Course Description

This course is the first in a sequence of courses that prepares individuals in repair and refinishing of uni-bodies and fenders of automobiles. This course is an introduction in non-structural repairs and various methods of refinishing and safety training. This course is based on the Automotive Service Excellence (ASE) automotive collision task list and the I-CAR training program. Industry work ethic standards and productivity are an integral part of the classroom and laboratory activities of this program as determined in the Professional Development Program (PDP).

Intended Grade Level	10-12
Units of Credit	0.5 - 1.0
Core Code	40.09.00.00.005
Concurrent Enrollment Core Code	N/A
Prerequisite	None
Skill Certification Test Number	500
Test Weight	.5
License Type	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Automotive Collision Repair
Endorsement 2	N/A
Endorsement 3	N/A

STRAND 1

Students will participate in personal and leadership development activities through SkillsUSA or another appropriate career and technical student organization.

Standard 1

Student will use communication skills to effectively communicate with others.

- Understand when it is appropriate to listen and to speak.
- Understand and follow verbal and written instructions for classroom and laboratory activities.

Standard 2

Student will effectively use teamwork to respectfully work with others.

- Identify and understand different roles in working with a team.

Standard 3

Student will use critical thinking and problem-solving skills.

- Analyze the cause of the problem.
- Develop a solution to address the problem.
- Implement the plan.
- Evaluate the effectiveness of the plan.

Standard 4

Student will be dependable, reliable, steady, trustworthy, and consistent in performance and behavior.

- Set and meet goals on attendance and punctuality.
- Prioritize, plan, and manage work to complete assignments and projects on time.

Standard 5

Student will be accountable for results.

- Use an achievement chart for activities and behaviors in class that encourages a personal evaluation of classroom performance.
- File a regular written report on progress toward completion of assignments and projects.

Standard 6

Be familiar with the legal requirements and expectations of the course.

- Be familiar with the course disclosure statement and all requirements for successful completion of the course.
- Demonstrate workplace ethics, e.g., fair, honest, disciplined.

STRAND 2

Students will participate in work-place readiness activities.

Standard 1

Student will demonstrate employability skills.

- Use a career search network to find career choices.
- Write a resume including a list of demonstrated skills.
- Write a letter of application.
- Complete a job application.
- Participate in an actual or simulated job interview.

Standard 2 Student will participate in a work-based learning experience outside the classroom.
Student will plan and implement a work-based learning experience aligned with their career goal.

STRAND 3
Students will be able to understand and demonstrate safety and environmental practices.

Standard 1
Explain the need for regulations and safety devices such as Environment Protection, state and local environmental laws, and regulations involved with the refinishing department.

Standard 2
Locate hazardous warning information for products used in refinishing. Be able to locate basic information from a Safety Data Sheet (SDS).

Standard 3
Identify and select the proper personal protection equipment, inspect it, and demonstrate its proper use.

Standard 4
Identify the Volatile Organic Compound (VOC) content of paint products and explain the environmental concerns.

Standard 5
Understand safety practices related to general shop, personal protection, vehicle lifts, and hand and power equipment.

Standard 6
Understand and identify different fasteners and their applications and repair procedures.

Standard 7
Understand how to select and properly use hand and select power tools.

Performance Skill
Understand and demonstrate safety and environmental practices.

- Explain the need for regulations and safety devices such as Environment Protection, state and local environmental laws, and regulations involved with the refinishing department.
- Locate hazardous warning information for products used in refinishing. Be able to locate basic information from a Safety Data Sheet (SDS).
- Identify and select the proper personal protection equipment, inspect it, and demonstrate its proper use.
- Identify the Volatile Organic Compound (VOC) content of paint products and explain the environmental concerns.
- Understand safety practices related to general shop, personal protection, vehicle lifts, and hand and power equipment.
- Understand and identify different fasteners and their applications and repair procedures.
- Understand how to select and properly use hand and select power tools.

STRAND 4

Students will understand automotive finishes.

Standard 1

Identify and distinguish between the different types of automotive finishes.

Standard 2

Select the proper finish for repairs and understand why certain repair finish systems and system parts are used.

Standard 3

Be able to read and understand how to mix a product from the tech sheet.

Performance Skill

Understand automotive finishes.

- Identify and distinguish between the different types of automotive finishes.
- Select the proper finish for repairs and understand why certain repair finish systems and system parts are used.
- Be able to read and understand how to mix a product from the tech sheet.

STRAND 5

Students will understand the principles needed to prepare a surface for refinishing.

Standard 1

Identify the type and color of a finish and plan a system for refinishing a vehicle.

Standard 2

Understand the importance of removing old paint from a vehicle using a variety of methods.

Standard 3

Understand the importance of corrosion protection and undercoatings, used in corrosion protection, and how to clean and treat the metal in the repair area before refinishing.

Standard 4

Understand corrosion principles and factory corrosion protection.

Standard 5

Protect exposed exterior surfaces, trim, and accessories.

Standard 6

Select proper sanding materials and equipment and know how to sand a vehicle prior to and during the refinishing process.

Standard 7

Determine where chip-resistant coatings have been used by the vehicle manufacturer and why this coating is used.

Standard 8

Understand the importance of masking a vehicle for spot repairs, panel repairs, or a complete refinish job using a variety of masking materials.

Standard 9
Understand the removal and installation of pinstripes, decals, and emblems.

Performance Skill
Understand the principles needed to prepare a surface for refinishing.

- Identify the type and color of a finish and plan a system for refinishing a vehicle.
- Understand the importance of removing old paint from a vehicle using a variety of methods.
- Understand the importance of corrosion protection and undercoatings, used in corrosion protection, and how to clean and treat the metal in the repair area before refinishing.
- Understand corrosion principles and factory corrosion protection.
- Protect exposed exterior surfaces, trim, and accessories.
- Select proper sanding materials and equipment and know how to sand a vehicle prior to and during the refinishing process.
- Determine where chip-resistant coatings have been used by the vehicle manufacturer and why this coating is used.
- Understand the importance of masking a vehicle for spot repairs, panel repairs, or a complete refinish job using a variety of masking materials.
- Understand the removal and installation of pinstripes, decals, and emblems.

STRAND 6
Students will understand and demonstrate metal straightening.

Standard 1
Identify the necessary tools to straighten a variety of damaged metals, including steel, aluminum, etc.

Standard 2
Straighten a damaged metal panel close to its original contours.

Standard 3
Understand the effects of heating various types of metals.

Standard 4
Understand the difference between a kink and a bend.

Performance Skill
Understand and demonstrate metal straightening.

- Identify the necessary tools to straighten a variety of damaged metals, including steel, aluminum, etc.
- Straighten a damaged metal panel close to its original contours.
- Understand the effects of heating various types of metals.
- Understand the difference between a kink and a bend.

STRAND 7
Students will understand the procedures necessary in the application of a finish.

Standard 1
Properly identify and prepare the surface for top coat application.

Standard 2
Understand different types of undercoats and how to apply them.

Standard 3
Demonstrate proper gun setup for undercoat and top coat applications.

Standard 4
Apply both base coat and clear coat finishes on a panel.

Performance Skill
Understand the procedures necessary in the application of a finish.

- Properly identify and prepare the surface for top coat application.
- Understand different types of undercoats and how to apply them.
- Demonstrate proper gun setup for undercoat and top coat applications.
- Apply both base coat and clear coat finishes on a panel.

STRAND 8
Students will understand and demonstrate detailing.

Standard 1
Describe the processes and importance of proper detailing, remove overspray and perform final finishing processes, including compounding and polishing, to improve the quality of the finish.

Standard 2
Understand the importance of thoroughly cleaning the vehicle before and after repairs; select and use proper cleaning products and tools to clean the vehicle exterior, including the engine compartment, tires and wheels.

Performance Skill
Understand and demonstrate detailing.

- Describe the processes and importance of proper detailing, remove overspray and perform final finishing processes, including compounding and polishing, to improve the quality of the finish.
- Understand the importance of thoroughly cleaning the vehicle before and after repairs; select and use proper cleaning products and tools to clean the vehicle exterior, including the engine compartment, tires and wheels.

STRAND 9
Students will read and understand a detailed damage report.

Standard 1
Describe the function and importance of damage reports and general business aspects in the collision repair industry.

Standard 2
Use a vehicle identification number and an information source to fully identify a vehicle.

Standard 3
Explain and identify different types of vehicle damage.

Standard 4
Identify and describe a general plan for repairs on a damaged area.

Standard 5
Explain the importance of planning, describe a sequence for damage analysis, and identify common industry parts names and repair terms.

Standard 6
Recognize damage to various mechanical systems of the vehicle.

Standard 7
Understand flat rate, hourly rate and pricing of materials as it applies to collision repair.

Performance Skill
Read and understand a detailed damage report.

- Describe the function and importance of damage reports and general business aspects in the collision repair industry.
- Use a vehicle identification number and an information source to fully identify a vehicle.
- Explain and identify different types of vehicle damage.
- Identify and describe a general plan for repairs on a damaged area.
- Explain the importance of planning, describe a sequence for damage analysis, and identify common industry parts names and repair terms.
- Recognize damage to various mechanical systems of the vehicle.
- Understand flat rate, hourly rate and pricing of materials as it applies to collision repair.

STRAND 10
Students will be able to understand and demonstrate the use of body fillers.

Standard 1
Select and understand the correct filler and tools needed to perform final finishing.

Standard 2
Properly clean and prepare the repair area before applying plastic filler.

Standard 3
Explain the preparation and application of specialty fillers.

Standard 4
Properly mix and apply plastic body filler to a properly prepared area.

Standard 5
Restore the original contour and shape of a straightened panel using plastic body filler.

Performance Skill

Understand and demonstrate the use of body fillers.

- Select and understand the correct filler and tools needed to perform final finishing.
- Properly clean and prepare the repair area before applying plastic filler.
- Explain the preparation and application of specialty fillers.
- Properly mix and apply plastic body filler to a properly prepared area.
- Restore the original contour and shape of a straightened panel using plastic body filler.

STRAND 11

Students will be able to understand and demonstrate MIG welding.

Standard 1

Describe metal joining methods and identify where each method is suitable in automotive sheet metal repair.

Standard 2

Explain and demonstrate all applicable personal and shop safety steps, along with vehicle protection measures, to be followed when welding and cutting.

Standard 3

Properly set up a MIG welder for welding automotive sheet metal.

Standard 4

Run a test weld and tune the welder for the welds being made.

Standard 5

Clean, assemble, and complete a butt joint with backing in a flat position; visually inspect the weld.

Standard 6

Clean, assemble, and complete a fillet weld lap joint in a flat position; visually inspect the weld.

Standard 7

Clean, assemble, and complete a plug weld in a flat position; visually inspect the weld.

Performance Skill

Understand and demonstrate MIG welding.

- Describe metal joining methods and identify where each method is suitable in automotive sheet metal repair.
- Explain and demonstrate all applicable personal and shop safety steps, along with vehicle protection measures, to be followed when welding and cutting.
- Properly set up a MIG welder for welding automotive sheet metal.
- Run a test weld and tune the welder for the welds being made.
- Clean, assemble, and complete a butt joint with backing in a flat position; visually inspect the weld.
- Clean, assemble, and complete a fillet weld lap joint in a flat position; visually inspect the weld.

STRAND 12

Students will be able to understand vehicle construction and parts identification.

Standard 1

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

Standard 2

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

Standard 3

Identify impact energy absorbing components.

Standard 4

Identify steel types; determine repairability.

Standard 5

Identify aluminum/magnesium components; determine repairability.

Standard 6

Identify plastic/composite components; determine repairability.

Standard 7

Identify vehicle glass components; determine repairability.

Standard 8

Identify add-on accessories.

Performance Skill

Understand vehicle construction and parts identification.

- Identify types of vehicle construction (space frame, unibody, body-over-frame).
- Recognize the different damage characteristics of space frame, unibody, and body-over-frame vehicles.
- Identify impact energy absorbing components.
- Identify steel types; determine repairability.
- Identify aluminum/magnesium components; determine repairability.
- Identify plastic/composite components; determine repairability.
- Identify vehicle glass components; determine repairability.
- Identify add-on accessories.

Skill Certification Test Points by Strand

Test Name	Test #	Number of Test Points by Strand										Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10		
Basic Auto Coll Repair	500	11	2	6	3	3	2	4	4	6	6	47	46