Collision Repair & Refinishing Technology

This all-inclusive diploma program was developed to train collision repair technicians in the current aspects of the technology including all areas identified by ASE and NATEF as inclusive in Master Program Accreditation. The program not only addressed all the areas of basic auto body repair and refinishing skills, including frame repair utilizing a measuring and straightening system, full size paint booths and profession mixing room, but allows the student to explore damage analysis, use of professional estimating software programs, and to understand characteristics of highly successful employee.

Course	Course Title	Clock Hours	Weeks	Quarter Credit Hours
CRR-101	Non-Structural Analysis & Damage Repair I	150	6	8.50
CRR-102	Non-Structural Analysis & Damage Repair II	150	6	8.50
CRR-103	Welding, Structural Analysis & Damage Repair I	150	6	8.00
CRR-104	Structural Analysis & Damage Repair II	150	6	8.50
CRR-105	Painting & Refinishing I	150	6	9.00
CRR-106	Painting & Refinishing II	150	6	8.50
CRR-107	Mechanical & Electrical I	150	6	8.50
CRR-108	Mechanical & Electrical II & Estimating	150	6	8.50
		1200	48	68

CRR-101-Non-Structural Analysis & Damage Repair I
This course is designed to introduce students to the basic information needed when beginning a career in the Collision Repair Industry. Students will learn basic tools and safe use, hazardous materials handling, personal safety and refinish safety, liability exposure, obligations to customer. Students will also be introduced to non-structural damage repair. They will learn how to repair, replace, adjust, fit, and align sheet metal and similar components. Through hands-on training of sheet metal replacement and aligning and fitting of these parts to industry customs, students will become knowledgeable in their understanding of a “repair plan” and its processes. Students will be trained in the removal and installation of trim and hardware according to industry standards. They will train on proper methods, processes, and the use of bonding adhesives for plastics.

CRR-102 Non-Structural Analysis & Damage Repair II
Students will learn the art of straightening steel. The students will gain practical experience repairing dents and damage to the body of vehicles using various methods. They will then be introduced to aluminum replacement and repair on vehicle exterior panels. Will learn about interval safety components including air bags, seat belts, and other related safety components. Students will learn how to troubleshoot repairs on various types of plastics and composites according to industry standards. Students will also learn about the different types of glass used in vehicles. They will gain practical experience in the removal and installation of stationary and movable glass. Students will learn how to troubleshoot repairs on various types of plastics and composites as they relate to industry standards. Tasks will include actual repairs, prepping, and priming the various plastics used on today’s vehicles.

CRR-103 Welding, Structural Analysis & Damage Repair I
Students will be trained in the use of proper structural welding according to industry standards. They will learn about the use of MIG welding and intro to oxyacetylene heating techniques and brazing. Using the principles and practices of welding associated with I-CAR and manufacturers’ standards, students will preheat, cut, and weld joints. Students will be introduced to vehicle suspension design and function. They will learn suspension system types, system parts, and steering column analysis. The course continues with an overview of electronic steering and suspension systems. Wheel alignment issues caused by a collision will be studied, as well as how to correct the damage and bring the vehicle into correct specifications

CRR-104 Structural Analysis & Damage Repair II
Students will learn the appropriate damage analysis and repair techniques for unibody and full frame vehicles used in the industry. Through theory and hands-on tasking, students will learn the systematic

procedures in MIG welding, heating, cutting, and sectioning, as well as frame setup, measure, pulling, and repairing of vehicles to factory and insurance industry specifications.

CRR-105 Painting & Refinishing I
Students will be introduced to painting and refinishing techniques by learning about the necessary safety measures for professionally handling paint and solvent products according to government regulations. Students will learn the industry standards for spray booth and equipment application and maintenance. They will become familiarized with single, two-stage, and tri-coat systems. Proper management of exterior trim components will be presented. Surface preparation and masking will be practiced.

CRR-106 Painting & Refinishing II
Students will learn the industry standards for color tinting and blending for perfect color matching. Students will practice spot panel and overall refinishing processes, polishing, and detailing. Analysis and troubleshooting of paint defects will be explored. Students will be presented with similarities and differences regarding how solvent and waterborne coatings react in a shop environment, characteristics and benefits, environmental impact, storage and disposal procedures. Corrosion protection application will also be studied and practiced.

CRR-107 Mechanical & Electrical I
Students will learn how to use a digital multimeter to measure voltage drops in a circuit and for diagnosing starting and charging system electrical faults. Students will learn about various aspects of electrical and electronic components used throughout the vehicle. Driveline vibration will also be discussed. Using theory and hands-on experience, students will be trained in electrical and air conditioning systems and components as well.

CRR-108 Mechanical & Electrical II & Estimating
Students will learn about various aspects of mechanical components damaged in collision. Using theory and hands-on experience, students will be trained in brakes, heating and cooling, drive train. Students will be trained proper collision damage analysis using theory and hands-on manual and computer-based estimating. The students will configure a repair plan that will include estimating and vehicle part identification to correctly develop a “bid” for repair on damaged vehicles using industry repair guidelines, Damage Analysis and Estimating software and techniques. Students will also be given an opportunity to learn how the Collision Repair Technician fits into various business models as an important part of the overall business. The students will gain an understanding of the responsibilities the position brings to the customer, management, and the company employing the individual.

Courses applicable to both Diploma or Associate of Applied Science Degree Programs