

AUTOMOTIVE COLLISION REPAIR & REFINISHING (COLL), AAS

At Dunwoody College of Technology, the Automotive Collision Repair & Refinishing program prepares graduates for employment in the collision repair and refinishing industry. Students receive classroom and hands-on training in vehicle repair procedures and techniques. Students learn to use specialized tools, materials, and techniques to straighten or replace damaged body panels and structural components as well as perform related mechanical and electrical repairs, restraint system repairs, and stationary glass replacement. Students also learn the latest procedures for partial and complete refinishing of an automobile as well as custom painting techniques.

Arts & Sciences curriculum supports the technical skills students learn and enhances oral and written communication skills, fundamental math skills, and critical thinking ability. In addition to the regular technical and Arts & Sciences courses, students complete two summer experiences.

The first summer features a production course at the College that focuses on customer vehicle work in the Collision Repair & Refinishing lab. The second summer features either an internship at an approved collision repair facility or another production course on site at the College.

Dunwoody's programs utilize Inter-Industry Conference on Auto Collision Repair (I-CAR) training materials, and the program is an I-CAR Training Alliance Member. Instructors are certified as master technicians by the National Institute for Automotive Service Excellence (ASE) and are I-CAR Gold Class professionals.

The ASE (Automotive Service Excellence) Education Foundation (previously known as the National Automotive Technicians Education Foundation or NATEF) which certifies and accredits automotive education programs, has accredited Dunwoody's Collision Program in all areas of collision repair and refinishing – the highest level of achievement recognized by ASE.

Credential Earned: AAS

Length of Program: 2 years (4 semesters + 2 summer sessions)

Classes Offered: Day

Available Starts: Fall Semester

Accreditation: ASE Education Foundation

Bachelor's Completion Option(s): Business Management Leadership (AMGT), Bachelor of Science (<https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/business/business-management-leadership-amgt-bs/>)

Program Outcomes

- Analyze and report costs of collision repairs.
- Repair nonstructural damage to vehicles.
- Repair structural damage to vehicles.
- Repair mechanical and electrical components.
- Perform painting and refinishing repairs.
- Demonstrate effective customer satisfaction techniques.

Degree Requirements

Code	Title	Credits
General Requirements		
Communications		3
Humanities		3
Natural Science/Mathematics		3
Social Sciences		3
General Electives		3
Technical Requirements		
ABDY1111	Introduction to Auto Body	1
ABDY1121	Bolt on Panel Replacement I	3
ABDY1131	Panel Straightening & Paint Prep	3
ABDY1140	Auto Body Welding	3
ABDY1151	Plastic Repairs	2
ABDY1211	Brake & Suspension Repairs	3
ABDY1221	Introduction to Refinishing	2
ABDY1230	Automotive Refinishing & Detailing	5
ABDY1311	Damage Analysis & Estimating	1
ABDY1320	Summer Production Repair Lab I	4
or ABDY1321	Summer Internship I	
ABDY2111	Aluminum Welding & Complex Panel Repair	3
ABDY2120	Electrical, A/C Repairs & Hybrid Safety	3
ABDY2131	Restraint Systems & Stationary Glass	3
ABDY2140	Finish Matching & Plastic Refinishing	2
ABDY2211	Panel Replacement II	3
ABDY2222	Structural Analysis, Measuring & Repair	6
ABDY2231	Custom Painting	1
ABDY2310	Production II Internship	4
or ABDY2320	Summer Production Repair Lab II	
Total Credits		67

Courses

Descriptions

ABDY1111 | Introduction to Auto Body | Lec/Lab (1 Credit)

Overview of the past, present, and future of the collision industry with emphasis on safety, equipment, tools, and body shop operations. Industry expectations and career opportunities are explored.

ABDY1121 | Bolt on Panel Replacement I | Lec/Lab (3 Credits)

Identify, remove, and install vehicle panels requiring bolt on or other mechanical fastener applications. Practice alignment techniques, identification of fasteners, use of industry and vehicle manufacturer approved methods.

Prerequisite(s): ABDY1111

ABDY1131 | Panel Straightening & Paint Prep | Lec/Lab (3 Credits)

Examine and practice industry acceptable methods of metal straightening, plastic filler application and contouring, use of primer surfacers, and sanding techniques. Preparation of substrates and existing finishes for refinishing on metal and plastic panels.

Prerequisite(s): ABDY1121

ABDY1140 | Auto Body Welding | Lec/Lab (3 Credits)

Relate safety, equipment, and welding techniques to collision repair. Special consideration to I-CAR welding procedures and tests.

Prerequisite(s): ABDY1130

ABDY1151 | Plastic Repairs | Lec/Lab (2 Credits)

Identify and practice techniques associated with welding, bonding, and cosmetic repair of automotive plastics. Prepare interior plastic for refinishing and re-texturing.

Prerequisite(s): ABDY1140

ABDY1211 | Brake & Suspension Repairs | Lec/Lab (3 Credits)

Identify automotive brakes, steering systems, and suspension systems. Remove and replace components. Examine systems for collision related damage. Wheel alignment theory and practice.

Prerequisite(s): ABDY1121

ABDY1221 | Introduction to Refinishing | Lec/Lab (2 Credits)

Identify personal safety issues and environmental concerns related to refinishing. Use of water-based paint and solvent-based paint systems and procedures. Practice refinishing procedures on metals and plastics as related to collision repair.

Prerequisite(s): ABDY1151

ABDY1230 | Automotive Refinishing & Detailing | Lec/Lab (5 Credits)

Practice refinishing of automotive collision repairs, and vehicle masking techniques; identify paint problems and corrections.

Prerequisite(s): ABDY1220

ABDY1311 | Damage Analysis & Estimating | Lec/Lab (1 Credit)

Practice in collision damage appraisal using industry accepted software and computerized estimating programs to prepare collision damage reports or estimates.

ABDY1320 | Summer Production Repair Lab I | Laboratory (4 Credits)

Practice the skills learned in the first year of coursework using customer vehicles.

ABDY1321 | Summer Internship I | Internship (4 Credits)

This Internship is offered for qualified students who are interested in fulfilling their 1st year production requirements for the Collision Program via a 192 hour internship rather than participating in ABDY 1320 Production Lab I at Dunwoody. Students must be able to secure an internship at a collision repair facility and have the approval of the Collision Program Faculty. Internship provides work experience as a technician in an automotive collision repair facility. A formal agreement will be developed between the student, the employer, and an advisor assigned by Dunwoody. Internship must be approved by the Department Director of the Internship Advisor.

Prerequisite(s): ABDY1230

ABDY2111 | Aluminum Welding & Complex Panel Repair | Lec/Lab (3 Credits)

Examine the properties of aluminum, aluminum alloys, welding processes and materials utilized in aluminum welding. Setup and adjustment of the MIG welder for aluminum, weld joint preparation, aluminum welding procedures and safety precautions. Welding on aluminum adhering to I-CAR aluminum welding standards and testing methods. Body panel damage assessment. Repair of steel and aluminum body panels with complex shapes and damage to style lines and attached inner panels. Procedures and products used to restore Corrosion Protection to repaired panels.

ABDY2120 | Electrical, A/C Repairs & Hybrid Safety | Lec/Lab (3 Credits)

Fundamentals of electricity and related automotive circuits, tracing of vehicle wiring diagrams and repair of collision related malfunctions of electrical components and wiring. Identification and usage of electrical test tools and head lamp aiming. Air conditioning theory of operation, properties of refrigerants, and safety procedures. Set up and use of air conditioning service equipment. Refrigerant reclaiming, recycling, evacuation and recharging. Diagnostic procedures for troubleshooting air conditioning systems. Safety precautions and disabling procedures for working on and around hybrid vehicle electrical systems.

ABDY2131 | Restraint Systems & Stationary Glass | Lec/Lab (3 Credits)

Explore the history of the development of restraint systems. Examine air bag theory of operation, function of components and wiring, deployment conditions, safety precautions, and inspection procedures for restraint systems. Practice service procedures for air bag and seat belt systems. Examine the role that glass plays in a modern vehicle. Demonstrate procedures for replacement of structural glass, correction of wind noises and water leaks, and removal and re-installation of interior trim.

ABDY2140 | Finish Matching & Plastic Refinishing | Lec/Lab (2 Credits)

Collision industry procedures used for color matching, tinting and blending. Color theory, panel preparation and practical application of urethane (solvent based) and waterborne automotive paint products utilizing color mixing systems. Procedures, techniques, and materials used in tri-coat (three stage) finish repairs. Specialized products and procedures used to refinish automotive plastics. Identification and refinishing of flexible plastic panels.

Prerequisite(s): ABDY1230

ABDY2211 | Panel Replacement II | Lec/Lab (3 Credits)

Identify, remove and install welded and adhesively bonded automotive body panels. Identify and use a squeeze type resistance spot welder and other specialized panel removal tools and welding equipment. Practice restoring corrosion protection to replaced panels using primers and anti-corrosion compounds. Identify and properly apply automotive body seam sealers.

Prerequisite(s): ABDY2131

ABDY2222 | Structural Analysis, Measuring & Repair | Lec/Lab (6 Credits)

Vehicle collision damage analysis, inspection techniques, damage classification and types of vehicle construction. Measuring concepts, set-up and use of measuring systems, vehicle anchoring systems and structural straightening equipment. Industry (I-CAR) guidelines for structural repairs including frame and unibody straightening, structural component replacement, sectioning and restoring corrosion protection. Disassemble vehicles for repairs, develop a vehicle repair plan, perform structural repairs, including repairs to mechanical and electrical systems as well as replacement of structural glass.

Prerequisite(s): ABDY2210

ABDY2231 | Custom Painting | Lec/Lab (1 Credit)

Surface preparation procedures, specialized refinish materials, spray equipment and techniques used for custom painting on vehicle panels or small projects. Materials utilized include standard urethane (solvent-based) base coats, waterborne base coats, candy colors, pearls, and metal flakes. Masking and design transfer techniques for custom painting.

Prerequisite(s): ABDY2222

ABDY2320 | Summer Production Repair Lab II | Laboratory (4 Credits)

Perform major and minor collision repairs; repair or replace structural members and exterior panels; remove and replace glass and upholstery; suspension and mechanical components; prepare panels for paint; refinish panels or vehicles as necessary. Create computerized repair estimates, discuss repairs with customers, order parts and assist in completion of repair orders for customer billing.

ABDY2310 | Production II Internship | Internship (4 Credits)

This Internship is offered for qualified students who are interested in fulfilling their 2nd year production requirement for the Collision Program via a 216 hour internship rather than participating in ABDY 2320 Production Lab II. Must be able to secure an internship at a collision repair facility and have the approval of the Collision program faculty. A formal agreement will be developed between the student, the employer, and an advisor assigned by Dunwoody. Internship must be approved by the Department Director of Internship Advisor.