

Area: Technical Education
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Degree: A.S. - Automotive Collision Technology
 Certificates: Automotive Collision Technology

Automotive Collision Technology Degree and Certificate

This degree or certificate provides a combination of classroom and hands-on shop experience to prepare for careers in all phases of automotive collision technology. Topics include component repairs, structural and non-structural repairs, and refinishing. It also covers various automotive systems, such as heating and air-conditioning, suspension and steering, and electrical.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- identify and estimate automotive collision damage.
- develop a repair plan.
- repair automotive collision mechanical damage.
- repair frame/unibody automotive collision structural damage.
- repair automotive collision body damage.
- refinish automotive collision damage.

Career Opportunities

This program provides training and hands-on experience in high-demand skills that lead to promising careers with high wages. The U.S. Labor Department reports that job opportunities for auto collision specialists are excellent because of the large number of older workers who are expected to retire in the next 5 to 10 years. In addition, it points out that experienced technicians are rarely laid off and that employers prefer to hire graduates of a formal training program because it provides a foundation in the latest collision technology, including the techniques and equipment used on the job.

Requirements for Degree or Certificate	31.5 Units
AT 121 Automotive Collision - Removal and Replacement of Non-Structural Components and Damage Analysis.....	4
AT 122 Automotive Collision - Non-Structural Repairs.	4
AT 123 Automotive Collision - Structural Panel & Component Repairs.	4
AT 124 Automotive Refinishing Technology.....	4
AT 126 Automotive Collision Estimating.....	2
AT 310 Heating and Air-Conditioning Systems.	4
AT 311 Suspension and Steering Systems.	4
AT 312 Electrical Systems.	4
WELD 103 Gas Metal Arc Welding of Sheet Steel.....	1.5

Associate Degree Requirements: The Automotive Collision Technology Associate in Science (A.S.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

ACT 110 Component Repairs 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course provides the technical information and hands-on experience to perform repairs to collision damaged vehicles. Topics covered are to correctly and safely remove, inspect, replace and align, bolt-on body components. It also covers the protection of mechanical and electrical systems, removal of damaged parts, anchoring theory and techniques applicable to damaged vehicles. Interpretation of damage analysis reports and types of collision damage are covered. Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Industry Conference on Automotive Collision Repairs (I-CAR) points. This ARC/I-CAR alliance course prepares students for Automotive Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

ACT 120 Non-Structural Repair 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course provides the technical information and hands-on experience to perform limited and supervised repairs to collision damaged vehicles. It covers the principles and theory of automotive collision repair including procedures for replacement of door skins and quarter panels. Additionally, metal straightening theory, and techniques for steel and aluminum, and making repair versus replacement decisions are covered. Measuring systems techniques and their use in diagnosing and correcting collision damage are also presented. Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Industry Conference on Automotive Collision Repair (I-CAR) points. This ARC/I-CAR alliance courses also prepares for Automotive Service Excellence (ASE) testing and National Automotive Technicians Educational Foundation (NATEF) training standards.

ACT 130 Structural Repair 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course covers principles and theory of automotive collision repair including component alignment, component replacement, structural panel repair or replacement, and chassis/frame alignment. Sectioning and full-panel replacement techniques and procedures are covered. Practical applications are emphasized. Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Conference on Automotive Repair (I-CAR) points. This ARC/I-CAR alliance courses also prepares students for Automotive Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

ACT 140 Automotive Refinishing 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course covers the principles and theories of paint finish application, tinting and blending, color evaluation, color adjustments, and evaluating color mismatch problems. Topics include paint application techniques, restoration of corrosion protection, blending procedures, new and emerging paint technologies, color identification, and interpreting vehicle color codes. It also addresses compliance with rules and regulations as determined by Occupational Safety and

Health Administration (OSHA), Environmental Protection Agency (EPA), Clean Air Act, and Volatile Organic Compound (VOC). Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Industry Conference on Automotive Collision repair (I-CAR) points. This ARC/I-CAR alliance courses also prepares student for Automate Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

Automotive Technology

AT 121 Automotive Collision - Removal and Replacement of Non-Structural Components and Damage Analysis 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course provides the technical information and hands-on experience to perform repairs to collision damaged vehicles. Topics covered are to correctly and safely remove, inspect, replace and align, bolt-on body components. It also covers the protection of mechanical and electrical systems, removal of damaged parts, anchoring theory and techniques applicable to damaged vehicles. Interpretation of damage analysis reports and types of collision damage are covered. Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Industry Conference on Automotive Collision Repair (I-CAR) points. This ARC/I-CAR alliance course prepares students for Automotive Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

AT 122 Automotive Collision - Non-Structural Repairs 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course provides the technical information and hands-on experience to perform limited and supervised repairs to collision damaged vehicles. It covers the principles and theory of automobile collision repair including procedures for replacement of door skins and quarter panels. Additionally, metal straightening theory, and techniques for steel and aluminum, and making repair versus replacement decisions are covered. Measuring systems techniques and their use in diagnosing and correcting collision damage are also presented. Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Industry Conference on Automotive Collision Repair (I-CAR) points. This ARC/I-CAR alliance courses also prepares students for Automotive Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

AT 123 Automotive Collision - Structural Panel & Component Repairs 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course covers principles and theory of automobile collision repair including component alignment, component replacement, structural panel repair or replacement, and chassis/frame alignment. Sectioning and full-panel replacement techniques and procedures are covered. Practical applications are emphasized. Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Conference on Automotive Collision Repair (I-CAR) points. This ARC/I-CAR alliance courses also prepares students for Automotive Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

AT 124 Automotive Refinishing Technology 4 Units

Hours: 54 hours LEC; 54 hours LAB

This course covers the principles and theories of paint finish application, tinting and blending, color evaluation, color adjustment, and evaluating color mismatch problems. Topics include paint application techniques, restoration of corrosion protection, blending procedures, new and emerging paint technologies, color identification, and interpreting vehicle color codes. It also addresses compliance with rules and regulations as determined by Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Clean Air Act, and Volatile Organic Compound (VOC). Students enrolled in the Collision Technology program at American River College (ARC) may be eligible to apply for Inter-Industry Conference on Automotive Collision Repair (I-CAR) points. This ARC/I-CAR alliance courses also prepares students for Automotive Service Excellence (ASE) testing and National Automotive Technicians Education Foundation (NATEF) training standards.

AT 126 Automotive Collision Estimating 2 Units

Hours: 18 hours LEC; 54 hours LAB

This course is designed to provide the student with both technical and practical skills necessary to properly diagnose collision damaged vehicles and to document the costs and times necessary to repair collision damaged vehicles. Using state-of-the-art computer-generated estimating programs and video imaging, the student will analyze collision-damaged vehicles and then prepare itemized estimates detailing the required procedures and parts necessary to correctly repair the vehicle.

AT 310 Heating and Air-Conditioning Systems 4 Units

Corequisite: AT 100.

Course Transferable to CSU

Hours: 54 hours LEC; 54 hours LAB

This course is an introduction to automotive heating and air conditioning theory. It meets Automotive Service Excellence (ASE) standard A7 and combines performance testing and repair practices as utilized in the industry.

AT 311 Suspension and Steering Systems 4 Units

Corequisite: AT 100.

Course Transferable to CSU

Hours: 54 hours LEC; 54 hours LAB

This course is an introduction to advanced principles and service of suspension and steering systems, including alignment of equipment, alignment procedures, and the diagnosis and repair of suspension components. It meets Automotive Service Excellence (ASE) A4 certification standards.

AT 312 Electrical Systems 4 Units

Corequisite: AT 100 and 105.

Course Transferable to CSU

Hours: 54 hours LEC; 54 hours LAB

This course covers the principles, operation, and diagnosis of automotive electrical systems including fundamentals of electricity (DC), electrical circuits, battery operation, fundamentals of magnetism, charging systems, starting systems and electrical schematics. This course meets Automotive Service Excellence (ASE) certification standards for the A6 electrical certification with completion of AT 315 and either AT 320 or AT 322.