

# Collision Repair & Refinishing: Scope & Sequence

## Year 1, Semester 1

AC101 - Automotive Collision Repair I  
(16 Weeks)

### District Pre-Assessment

#### Unit 1 (1 Week)

##### Intro to Collision and Careers:

- Overview of Industry Careers
- Job Outlook

CTSO Integration (Leadership Skills): Hold Officer Elections  
Professional Skills: 7.A-C

Academic Standards ELA 11-12.RI.7-ELA 11-12.W.9

I-Car Courses: GEO10E01 Vehicle Construction & Vehicle Types; NEW16 Vehicle Technology and Trends 2016

#### Unit 2 (3 Weeks)

##### Safety, Health, Knowledge and Skills:

- Personal Protective Equipment
- Uniform
- Shop Hazards
- 6H Certification: Emission Standards Hazardous Air Pollutants, Safety & Pollution Prevention exam

CTSO Integration (Leadership Skills): Hold CTSO Meeting,  
Repair Dent on Fender

Professional Skills: 8.A-J

Academic Standards: ELA 11-12.L.4

Work-based Learning: Hands on, locate and describe safety measures for specific scenarios.

Technical Standard: 1.1-1.4- 7.1-7.5

I-Car Course: WKR01 Safety; HWD01 Hazardous Materials Disposal & Storage

I-Car Intro Courses: IPS00e Intro to Personal Safety; ISS00e Intro to Safety Systems

#### Unit 3 (2 Weeks)

##### Safe Use of Tools and Equipment:

- Hand tools
- Pneumatic Tools
- Body Tools
- Tool Maintenance
- Apply fillers & Sanding Techniques

Professional Skills: 8.A-J

Academic Standards: ELA.11-12.RI.2 - ELA.11-12.RI.10

Work-based Learning: Hands on instruction on fenders.

Technical Standard: 3.3, 3.6, 8.1-8.7

I-Car Course: STS01 Cosmetic Straightening Steel

I-Car Intro Course: ITM01e Intro to Tools, Equipment, & Attachment Methods Part 1; ITM02e Intro to Tools,

Equipment, & Attachment Methods Part 2; IRT00e Intro to Industry Repair Terms

#### Unit 4 (2 Weeks)

##### Determine Vehicle Construction and Parts Identification:

- Vehicle Structures & Types of Steels
- Alternative Structures (composite, carbon fibers)
- Movable Glass and Hardware

Professional Skills: 3.A-E

Academic Standards: ELA.11-12.W.9 - ELA.11-12.L.4

Work-based Learning: School-Based Enterprise

Technical Standard: .1-4.4, 15.1-15.4, 15.6

I-Car Course: GLA01 Moveable & Stationary Glass

I-Car Intro Course: ICM00e Intro to Vehicle Construction

Materials; IVT01e & IVT02e Intro to Vehicle Parts &

Terminology Part 1 & 2; IMT01e & IMT02e Intro to

Mechanical Systems Technology Parts 1 & 2; IMV00e Intro to Mechanical Repair Terms and Vehicle Protection

#### Unit 5 (1 Week)

##### Damage Analysis and Estimation:

- Physical damage (direct/indirect)
- Repair/replacement of parts
- Parts pricing and availability
- Computerized Estimating

CTSO Integration (Leadership Skills) SkillsUSA State Conference

Professional Skills: 6.A-C; 7.A-C; 9.A-C

Academic Standards: ELA.11-12.RI.7 to ELA.11-12.W.9

Work-Based Learning: School-Based Enterprise

Technical Standard: 2.1, 13.12, 13.13, 13.16, 14.1, 14.2, 14.21, 14.22, 15.8

I-Car Intro Course: IRP00e Intro to Repair Process Overview

#### Unit 6 (2 Weeks)

##### Surface Preparation for Painting and Refinishing:

- Sandpaper (grit)
- Surface Cleaning methods
- Masking Procedures

CTSO Integration (Leadership Skills): SkillsUSA Fall Leadership Conference

Professional Skills: 1.A-D

Academic Standards: ELA.11-12.L.4, ELA.11-12.SL.4

Work-based Learning: Practice on Fenders, School-Based Enterprise.

Technical Standard: 3.1 - 3.5, 3.7, 3.8, 8.2, 8.4-8.16, 8.24

I-Car Intro: IRC01e & IRC02e Intro to Refinishing & Corrosion Protection Parts 1 & 2

I-Car Course EXT02e & EXT03e Bolted on Panel replacement  
I-Car Course TRM02e & TRM03e Trim and Hardware

### Unit 7 (2 Weeks)

#### **Spray Gun and Related Equipment Operations:**

- Compressed Air Requirements
- Spray Gun setup

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 1.A-D

Academic Standards: ELA.11-12.W.7

Work-based Learning: Student Practice fenders and Live Student Based Enterprise.

Technical Standard: 2.0, 4.0, 11.0

I-Car Course: REF01 Refinish Program 1

### Unit 8 (2 Weeks)

#### **Painting and Refinishing:**

- Spray technique
- Spray gun adjustment
- Spray equipment cleaning and maintenance

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 1.A-D

Academic Standards: ELA.11-12.W.8, ELA 11-12.W.9

Work-based Learning: School-Based Enterprise

Technical Standard: 3.3, 3.6

I-Car Course: REF02 Refinish Program 2

### Unit 9 (2 Weeks)

#### **Final Painting and Refinishing Detail:**

- Determine need for buffing
- Buffing techniques
- Final Detailing procedures

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 2.A-C

Academic Standards: ELA 11-12.SL.4

Work-Based Learning: Job Shadow Experience Prep

Technical Standard: 12.1-12.6

### **Semester Exam**

#### **Year 1, Semester 2**

AC102 - Automotive Collision Repair II  
(15 Weeks)

### Unit 10 (2 Weeks)

#### **Outer Body Repairs, Replacement & Adjustments:**

- Identify components
- Tools and procedures
- Panel adjustment procedures

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.SL.4

Work-Based Learning: Job Shadow Experience

Technical Standard: 2,4-2.7

### Unit 11 (2 Weeks)

#### **Plastics and Adhesives Repair-ability:**

- Plastic identification
- Preparation of repairs
- Determine necessary repairs

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.L.4

Work-Based Learning: School-Based Enterprise

Technical Standard: 2.9, 6.1-6.4

I-Car Course PLA03 Plastic and Composite Repair

### Unit 12 (1 Week)

#### **Non Structural Analysis & Damage Repair:**

- Metal Welding and Cutting
- Removal and replacement of parts
- Non-structural replacement procedures

CTSO Integration (Leadership Skills): SkillsUSA Regional Conference

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.SL.4

Work-Based Learning: School-Based Enterprise

Technical Standard: 1.0, 5.1, 5.2, 5.4-5.11

### Unit 13 (2 Weeks)

#### **Paint Defects, Causes, and Cures:**

- Paint Mixing, Matching and Applying:
- Determine vehicle off-shade
- Paint mixing and scale procedures
- Paint matching and blending

CTSO Integration (Leadership Skills): Skills Regional Conference

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.W.s

Work-Based Learning: School-Based Enterprise

Technical Standard: 10.1-10.4, 10.9, 10.10, 10.12, 10.13

### Unit 14 (2 Weeks)

#### **Paint Defects, Causes, and Cures:**

- Paint Defects & determine causes
- Apply proper repair procedures

Professional Skills: 1.A-D

Academic Standards: ELA.11-12.W.9

Work-Based Learning: School-Based Enterprise

Technical Standard: 11.13-11.27

Unit 15 (1 Week)

**Damage Analysis:**

- Physical damage (direct/indirect)

CTSO Integration (Leadership Skills) SkillsUSA State Conference

Professional Skills: 6.A-C

Academic Standards: ELA.11-12.RI.7 to ELA.11-12.W.9

Work-Based Learning: School-Based Enterprise

Technical Standard: 2.1, 13.12, 13.13, 13.16, 14.1, 14.2

Unit 16 (1 Week)

**Estimation:**

- Repair/replacement of parts
- Parts pricing and availability
- Computerized Estimating

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 7.A-C; 9.A-C

Academic Standards: ELA.11-12.RI.7 to ELA.11-12.W.9

Work-Based Learning: School-Based Enterprise

Technical Standard: 14.21, 14.22, 15.8

Unit 17 (1 Week)

**Customer Service and Selling Skills:**

- Ethical business practices
- Communication skills

Certification: (I-CAR) Non-Structural Exam

CTSO Integration (Leadership Skills): SkillsUSA National Conference

Professional Skills: 1.A-D; 9.A-C

Academic Standards: ELA.11-12>SL.4

Work-Based Learning: School-Based Enterprise

Technical Standard: 16,1-16.7

**Year 2, Semester 1**

AC201 - Automotive Collision Repair III

(16 Weeks)

Unit 1 (2 Weeks)

**Safety and Tool Use:**

- Review of Proper Procedures
- Tool checkout and storage

CTSO Integration (Leadership Skills): Hold Officer Elections

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA 11-12.L.4

Work-Based Learning: School-Based Enterprise

Technical Standard: 7.1-7.6

Unit 2 (2 Weeks)

**Welding:**

- Welding consumables
- Welder setup and techniques

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.L,4

Work-Based Learning: School-Based Enterprise

Technical Standard: 2.11, 5.12-5.19

Unit 3 (2 Weeks)

**Non Structural Analysis & Damage Repair:**

- Quarter Panels
- Door Skins

CTSO Integration (Leadership Skills): CTSO Meeting

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.SL.4

Work-Based Learning: School-Based Enterprise

Technical Standard 2.2, 2.8-2.10, 2.12-2.17

I-Car Course GLA01 Movable Glass

Unit 4 (2 Weeks)

**Plastics and Adhesive Repair-ability:**

- Need and types of repairs
- Intro to epoxy and plastic welding
- Polyvance and 3M Demonstrations
- First Aid/Medications

Certification: ASE, Non-Structural Analysis and Damage Repair and Painting and Refinishing

CTSO Integration (Leadership Skills): SkillsUSA Fall Conference

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.L.4

Work-Based Learning: School-Based Enterprise

Technical Standards: 6.1-6.5

Unit 5 (2 Weeks)

**Resume Writing and Career Pathways:**

- Collision Education Scholarship

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.W4 to ELA.11-12.W.5

Work-Based Learning: Resumes and Mock Interviews

Unit 6 (2 Weeks)

**Paint Mixing and Application:**

- 2 & 3 Stage solvent based
- Paint mixing and applications

CTSO Integration (Leadership Skills): CTSO MEeting

Professional Skills: 1.A-D; 2.A-C

Academic Standards: 5.NF.B.6, 6.RP.A.3,7.RP.A.3, G-GMD.A.3

Work-Based Learning: School-Based Enterprise

Technical Standard: 10.5-10.8, 10.11, 10.14-10.16

I-Car Course CPS01 - Corrosion Protection

Unit 7(1 Weeks)

**Job Shadow Experience Prep:**

- Secure opportunity observing industry practices

Professional Skills: 1.A-D; 2.A-C

Academic Standards:ELA.11-12.SL.4 toTo ELA.11-12.SL.6

Work-Based Learning: Job Shadowing

Technical Standard

**Semester Exam**

**Year 2, Semester 2**

AC202 - Automotive Collision Repair IV

(14 Weeks)

Unit 8 (3 Weeks)

**Paint Defects, Cures, Causes:**

- Determine imperfections
- Correct imperfections

CTSO Integration (Leadership Skills): SkillsUSA Regional Conference

Professional Skills: 1.A-D; 2.A-C

Academic Standards:ELA.11-12.W.5 to ELA.11-12.L.4

Work-Based Learning: Job Shadow Experience ( 4 days)

Technical Standard: 11.1-11.12

Unit 9 (3 Weeks)

**Damage Analysis/Estimation:**

- Review handwritten estimates
- Computerized estimating (CCC)

Certification: ASE Non-Structural Analysis and Damage and Repair and Painting and Refinishing, ASE Structural Analysis and Damage Repair, Mechanical and Electrical Components (optional) I-CAR Refinish Pro Level 1

CTSO Integration (Leadership Skills): Competition Project Prep

Professional Skills: 7.A-C; 9.A-C

Academic Standards: ELA.11-12.W.4,7-9, ELA.11-12.RI.7

Work-Based Learning: School-Based Enterprise

Technical Standard: 13.1-13.11, 13.14, 13.15, 13.17, 14.3-14.20, 14.22-14.27

Unit 10 (4 Weeks)

**Customer Service Skills:**

- Communication skills
- Mock Scenarios

CTSO Integration (Leadership Skills): SkillsUSA State Conference

Professional Skills:1.A-D; 2.A-C

Academic Standards:ELA.11-12.SL.3

Work-Based Learning: Mock Interview; Career Fair

Technical Standard: 16.8-16.12

Unit 11 (1 Week)

**ADE End of Program Review:**

- Review Technical Standards

CTSO Integration (Leadership Skills): SkillsUSA State Conference

Academic Standards: ELA.11-12.RI.2

Technical Standard: Covers All Standards

**ADE Technical Skills Assessment**

Unit 12 (2 Weeks)

**Repair-ability of aluminum**

- Aluminum repair methods
- Content covered

CTSO Integration (Leadership Skills): SkillsUSA National Conference

Professional Skills: 1.A-D; 2.A-C

Academic Standards: ELA.11-12.RI.2

Work-Based Learning: Student Externship Experience

Technical Standard: 2.3, 3.9, 3.10, 5.3, 15.5

Arizona Department of Education (ADE)

Automotive Service Excellence (ASE)

Common AZCCR Math Standards (CAMS)

English Language Arts Standards (ELAS)

Inter-Industry Conference on Auto Collision Repair (ICAR)