

Collision Repair & Refinishing: Scope & Sequence

Year 1, Semester 1

AC101 - Automotive Collision Core Curriculum

District Pre-Assessment

Unit 1 (5 Class Days)

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 (10 Days - 5 class, 5 lab)

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 (15 Days - 7 class - 8 lab)

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 (10 Days - 5 class, 5 lab)

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 (5 Class Days)

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 (10 Days - 5 class, 5 lab)

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

Technical Standard: 2,4-2.7
I-Car Course EXT02e & EXT03e Bolted on Panel replacement
I-Car Course TRM02e & TRM03e Trim and Hardware

Unit 7 (10 Days - 5 class, 5 lab)

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 11 (10 Days - 5 class, 5 lab)

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 8 (10 Days - 5 class, 5 lab)

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 12 (5 Class Days)

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 9 (10 Days - 5 class, 5 lab)

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

Unit 13 (10 Days - 5 class, 5 lab)

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

Semester Exam

Year 1, Semester 2

AC102 - Automotive Collision Repair
(15 Weeks)

Unit 10 (10 Days - 5 class, 5 lab)

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

Unit 14 (10 Days - 5 class, 5 lab)

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 (5 Class Days)

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 (5 Class Days)

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 (5 Class Days)

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 Non-Structural Repair

Unit 1 (10 Days - 5 class, 5 lab)

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 (10 Days - 5 class, 5 lab)

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 (10 Days - 5 class, 5 lab)

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 (10 Days - 5 class, 5 lab)

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 (10 Days - 5 class, 5 lab)

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.W.4 to ELA.11-12.W.5

Work-Based Learning: Resumes and Mock Interviews

Unit 6 (20 Days - 10 class, 10 lab)

Paint Mixing and Application:

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

CTSO Integration (Leadership Skills): CTSSO 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 (5 Lab Days)

Job Shadow Experience Prep:

- Secure opportunity observing industry practices

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

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

Work-Based Learning: Job Shadowing

Technical Standard

Semester Exam

Year 2, Semester 2

AC202 - Automotive Collision Advanced Painting Techniques
(14 Weeks)

Unit 8 (15 Days - 7 class, 8 lab)

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 (10 Days- 5 class, 5 lab)

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 (8 Class Days)

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 (7 Class Days)

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 (10 Days - 5 class, 5 lab)

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)