



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	ACRP
Course Number:	2C
Descriptive Title:	Automotive Refinishing Applications
Division:	Industry and Technology
Department:	Automotive Collision Repair/Painting
Course Disciplines:	Automotive Collision Repair/Painting
Catalog Description:	This advanced course builds skills in spraying multi-stage colors, blending and spot refinishing. Topics include smart masking and custom gun adjustment, working with complex shapes such as bumper covers and jambs, preventing and correcting paint defects both wet and dry, and formulating the best refinishing strategy for an estimate based on vehicle color, condition, damage and design. This course contains Inter-Industry Conference on Auto Collision Repair (I-CAR) curriculum for Refinishing certification credit, and may include CA Rule 40 Subpart HHHHHH certification.
Prerequisite:	Automotive Collision Repair/Painting 1A or Automotive Collision Repair/Painting 5A with minimum grade of C in prerequisite or equivalent
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	3
Hours Laboratory (per week):	15
Outside Study Hours:	6
Total Course Hours:	324
Course Units:	8
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education:	ECC
Term:	

Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	
CalIGETC:	
Term:	
Other:	
Student Learning Outcomes:	SLO #1 Color Matching and Spot Blends Students will be able to choose the proper color variant for color match and perform a spot blend on a repaired sample panel. SLO #2 Two-Tone Plastic Bumpers Students will be able to prepare and refinish a flexible two-tone plastic bumper using the correct chemicals and production shop procedures. SLO #3 Tri-Coat Letdown Panel Students will be able to differentiate between 2-stage and 3-stage color codes, obtain color formula information, pour toners to create basecoat and midcoat paints, and create a 5-step letdown panel to test the paint for color match to a sample chip.
Course Objectives:	1. Complete a comprehensive automotive collision repair/painting safety test with 100% accuracy. 2. Select and utilize the correct safety equipment for dermal and inhalation exposure to automotive refinishing solvents or paints. 3. Prepare estimates of refinishing costs, labor times and materials. 4. Select and properly utilize paint additives including gloss additives, flex agents, flattening agents and fisheye eliminator. 5. Select and utilize the correct paint removal process for painted automotive surfaces. 6. Prepare and refinish plastic panels. 7. Prepare and refinish body panels utilizing spot repair techniques. 8. Color-sand and buff topcoat paints. 9. Select, mix and apply automotive multi-stage paints.
Major Topics:	I. PERSONAL SAFETY AND SAFE LAB PRACTICES (3 hours, Lecture) A. Industry overview B. Industry safety practices C. Occupational Safety and Health Administration (OSHA) requirements D. Respirators E. Remote air supply

II. PERSONAL SAFETY AND SAFE LAB PRACTICES (15 hours, Lab)

- A. Shop tour spray booth tour
- B. Spray booth operation instruction

III. ESTIMATING (6 hours, Lecture)

- A. Nomenclature
- B. Estimating materials
- C. Estimating programs
- D. Refinishing times
- E. Overlap deductions
- F. Materials cost
- G. Sublet items
- H. Waste disposal
- I. Vehicle inspection

IV. ESTIMATING (15 hours, Lab)

- A. Analyze damage
- B. Input data

V. PAINT ADDITIVES (3 hours, Lecture)

- A. Safety practices
- B. Purpose and application processes
- C. Reduction and mixing procedures
- D. Flex additives
- E. Flattening agents
- F. Gloss additives
- G. Fisheye eliminator

VI. PAINT ADDITIVES (15 hours, Lab)

- A. Reduction and mixing
- B. Application

VII. PAINT REMOVAL (6 hours, Lecture)

- A. Safety practices
- B. Chemical paint strippers
- C. Mechanical paint remover
- D. Media blasting
- E. Application and removal techniques
- F. Waste disposal

VIII. PAINT REMOVAL (30 hours, Lab)

- A. Apply chemical stripper
- B. Mechanically strip panels
- C. Media blast panels

IX. PLASTIC COMPONENT REFINISHING (6 hours, Lecture)

- A. Safety practices
- B. Surface identification
- C. Surface preparation
- D. Surface compatibility
- E. Adhesion promoters
- F. Application techniques
- G. Waste disposal

X. PLASTIC COMPONENT REFINISHING (15 hours, Lab)

- A. Prepare surfaces
- B. Application techniques

XI. SPOT REPAIR (6 hours, Lecture)

- A. Safety practices
- B. Tape and masking materials
- C. Surface preparation
- D. Vehicle masking
- E. Backmasking
- F. Blending techniques
- G. Blending materials
- H. Waste disposal

XII. SPOT REPAIR (45 hours, Lab)

- A. Taping and masking
- B. Surface preparation
- C. Material application

XIII. MULTI-STAGE FINISHES (6 hours, Lecture)

- A. Safety practices
- B. Surface preparation
- C. Masking techniques
- D. Materials mixing and application
- E. Spray gun techniques
- F. Drying times
- G. Waste disposal

XIV. MULTI-STAGE FINISHES (45 hours, Lab)

- A. Surface preparation
- B. Material application

XV. COLOR SANDING AND BUFFING (6 hours, Lecture)

- A. Safety practices
- B. Techniques
- C. Tape and masking materials

- D. Surface preparation
- E. Compounds and polishes
- F. Pneumatic buffers
- G. Electric buffers

XVI. COLOR SANDING AND BUFFING (30 hours, Lab)

- A. Surface preparation
- B. Polishing techniques

XVII. PAINT ACCESSORIES (3 hours, Lecture)

- A. Emblems, decals, tape strips
- B. Identification
- C. Removal
 - 1. Mechanical
 - 2. Adhesive
 - 3. Heat
- D. Application

XVIII. PAINT ACCESSORIES (15 hours, Lab)

- A. Removal
- B. Application

XIX. PAINT DEFECTS - CAUSES AND CURES (9 hours, Lecture)

- A. Defects due to improper prep
 - 1. Fish eyes, dirt and dust
 - 2. Lifting, poor adhesion
 - 3. Overspray
 - 4. Sandscratch swelling
 - 5. Contour mapping
- B. Defects due to poor gun setup or spraying technique
 - 1. Dry spray, orange peel
 - 2. Runs and sags
 - 3. Pigment flotation, mottling
 - 4. Transparency
- C. Defects due to improper drying/curing
 - 1. Blistering, solvent pop
 - 2. Tape tracking
 - 3. Dieback, low gloss
- D. Defects due to chemical problems
 - 1. Cracking, checking
 - 2. Bleed-through
 - 3. Pin holing
- E. Post-paint issues
 - 1. Buffing swirl marks and wheel burn
 - 2. Color mismatch, improper blend
 - 3. Water spots, bird droppings, airborne contaminants

	4. Chalking, fading XX. PAINT DEFECTS - CAUSES AND CURES (45 hours, Lab) A. Defects due to improper prep 1. Fish eyes, dirt and dust 2. Lifting, poor adhesion 3. Overspray 4. Sandscratch swelling 5. Contour mapping B. Defects due to poor gun setup or spraying technique 1. Dry spray, orange peel 2. Runs and sags 3. Pigment flotation, mottling 4. Transparency C. Defects due to improper drying/curing 1. Blistering, solvent pop 2. Tape tracking 3. Dieback, low gloss. D. Defects due to chemical problems 1. Cracking, checking 2. Bleed-through 3. Pin holing E. Post-paint issues 1. Buffing swirl marks and wheel burn 2. Color mismatch, improper blend 3. Water spots, bird droppings, airborne contaminants 4. Chalking, fading
Total Lecture Hours:	54
Total Laboratory Hours:	270
Total Hours:	324
A.1. Primary Methods of Evaluation (Part 1 - CCN courses only):	
A.2. Primary Method of Evaluation (Part 2 - all courses; choose one):	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Prepare a damaged (scraped) plastic bumper fascia for spot refinishing, locate a blendable match from color resources, obtain the color formula and mix the paint needed. Apply the paint using spot refinishing and undetectable blending techniques, then apply clearcoat to the whole bumper cover or section as determined by the bumper design and damage location.
Critical Thinking Assignment 1:	In groups of 3-4 students, research and compare the amount of orange peel texture found on clearcoats of 5 or more vehicle brands. Prepare a 5-10 minute presentation on which chemicals, gun settings, and user techniques will replicate the texture on one

	chosen brand when refinishing, and why matching this texture is important for collision repair.
Critical Thinking Assignment 2:	Prepare a one-page report describing the equipment, materials and procedures required to refinish a plastic bumper fascia. Submit report to the instructor.
Other Evaluation Methods:	Class Performance, Completion, Homework Problems, Matching Items, Multiple Choice, Other Exams, Performance Exams, Quizzes
Instructional Methods:	Demonstration, Group Activities, Guest Speakers, Lab, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Answer questions, Required reading, Study
If Other:	
Up-To-Date Representative Texts:	Joe Baker. <u>Auto Collision Repair and Refinishing</u> . 4th edition. Goodheart-Willcox. 2025.
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	1. Safety glasses 2. Organic vapor respirator 3. Nitrile or latex gloves 4. Ear plugs 5. Dust mask 6. High Volume, Low Pressure (HVLP) or High Transfer Efficiency (HTE) gravity feed spray gun (1.3 or 1.4 tip size) 7. Sprayout cards 8. Degreaser spray
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	Automotive Collision Repair/Painting-1A Automotive Collision Repair/Painting-5A
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	Set up a spray gun for primer application. ACRP 1A - Set up, operate and clean a primer spray gun ACRP 5A - Locate and identify the parts of an HVLP gravity feed spray gun. Adjust, properly use and clean the gun. Sand automotive body components to prepare for painting. ACRP 1A - Prepare multiple surfaces for refinishing including bare and pre-painted steel and plastic.

	ACRP 5A - Prepare a repaired, a scratched/chipped, a primed and a painted surface for refinishing. Mask automotive surfaces for painting. ACRP 5A - Mask a vehicle for primer, for jamb painting, and for exterior painting. Mask an area for spot refinishing. ACRP 1A - Mask panels and jambs for primer.
Requisite Skill:	Prerequisite
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	If students have taken an equivalent course at another college or have experience in automotive collision repair and painting, students will be prepared to enroll in this course. Students need automotive collision repair and painting experience to succeed in this course.
Requisite course:	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
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Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	John Harper
Date:	09/01/1982
Original Board Approval Date:	
Last Reviewed and/or Revised by:	PATRICIA FAIRCHILD
Date:	11/08/2025
Last Board Approval Date:	01/21/2026
Effective Term:	FA 2026