



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	ACRP
Course Number:	5C
Descriptive Title:	Intermediate Automotive Refinishing I
Division:	Industry and Technology
Department:	Automotive Collision Repair/Painting
Course Disciplines:	Automotive Technology
Catalog Description:	In this course, students will learn refinishing repair standards and how to write an estimate for refinishing. Students will learn how to identify and correct paint flaws, choose color variants, retrieve and mix paint formulas, adjust paint for color match, and perform panel blends and spot repairs. Students will also learn how to mask panels for blending and how to refinish composite materials such as fiberglass and carbon fiber. This course contains Inter-Industry Conference on Auto Collision Repair (I-CAR) Professional Development Program curriculum.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	2
Hours Laboratory (per week):	7
Outside Study Hours:	4
Total Course Hours:	162
Course Units:	4
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	2/17/2015
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	

CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	
Student Learning Outcomes:	SLO #1 Formula Lookup & Toner Pour Students will be able to retrieve a vehicle's color code and formula information, select the correct quantity for the job, and correctly pour the toners to create the paint. SLO #2 Color Variants and Sprayout Cards Students will be able to locate a vehicle's color code (and plant of manufacture if needed), and select the correct variant from a sample deck. The student will create a sprayout card of their chosen color and evaluate the card for color match. SLO #3 Paint Flaws & Corrections Students will be able to identify by name different types of paint flaws and their causes. Students will also be able to identify which flaws can be corrected in the spray booth while wet, which ones must be corrected after they have dried, and the correction tools and technique for each.
Course Objectives:	1. Complete a comprehensive automotive collision repair/painting safety test with 100% accuracy. 2. Create a written estimate for finish damage on a vehicle such as a scraped bumper cover, clearcoat failure due to ultraviolet light damage, or a key-scratched vehicle. Calculate a total for labor and for materials. 3. Identify at least ten paint flaws and determine if the cause was poor preparation, poor application, or a poor chemical mixing/drying situation. Determine the procedure and tools needed to correct each condition. 4. Locate a vehicle's color code, look up the color formula using a computer, select a test quantity and print a mixing formula for the color. Mix the formula using toners and spray the color and clearcoat on a sprayout card. Compare your sprayout card to the vehicle and describe any differences using industry standard adjectives. 5. Using a vehicle with a difficult-to-match color, locate a vehicle's color code and select a matching color variant from a deck. Look up and print the formula, mix the paint and create a sprayout card. Compare the sprayout card to the vehicle and describe any differences using industry standard adjectives. 6. Using a practice panel or large paper with edge and circle targets, spray a blend that covers the edge/circle and fades evenly to no coverage within the dimensions of the panel. 7. Using a vehicle part such as a bumper cover, create a small sand-through damaged area on a face and an edge. Using masking and blending techniques, undetectably repaint the two damaged areas without repainting the whole part. Apply clearcoat to the repaired area. 8. Identify the chemicals and application procedures needed to refinish a composite materials part such as a new carbon fiber hood or fiberglass bumper cover. Contrast this procedure to refinishing a previously painted composite part.

Major Topics:

I. PERSONAL SAFETY AND SAFE LAB PRACTICES (4 hours, lecture)

- A. Shop tour
- B. General safety practices & personal safety equipment

II. ESTIMATING & INDUSTRY REPAIR STANDARDS (4 hours, lecture)

- A. Industry repair standards for refinishing
- B. Shop and paint manufacturer guarantees on materials, repairs
- C. Writing an estimate for paint damage (surface damage)
- D. Calculating labor and materials totals on an estimate

III. ESTIMATING & INDUSTRY REPAIR STANDARDS (14 hours, lab)

- A. Industry repair standards for refinishing
- B. Shop and paint manufacturer guarantees on materials, repairs
- C. Writing an estimate for paint damage (surface damage)
- D. Calculating labor and materials totals on an estimate

IV. PAINT FLAWS, CAUSES & CURES (4 hours, lecture)

- A. Paint flaws due to poor preparation of surface and spraying environment
- B. Paint flaws due to poor application technique
- C. Paint flaws due to poor chemical mixing or drying
- D. Procedures and tools for correcting paint flaws - wet, dry, most efficient, most cost-effective
- E. Procedures and tools for removing existing and unstable paint finishes
- F. [National Automotive Technicians Education Foundation (NATEF) Painting and Refinishing tasks: Section E, numbers 1-27]

V. PAINT FLAWS, CAUSES & CURES (14 hours, lab)

- A. Paint flaws due to poor preparation of surface and spraying environment
- B. Paint flaws due to poor application technique
- C. Paint flaws due to poor chemical mixing or drying
- D. Procedures and tools for correcting paint flaws - wet, dry, most efficient, most cost-effective
- E. Procedures and tools for removing existing and unstable paint finishes
- F. (NATEF Painting and Refinishing tasks: Section E, numbers 1-27)

VI. PAINT CODES & FORMULAS (4 hours, lecture)

- A. Locating paint codes on vehicle, online and in reference books
- B. Looking up color formulas, setting quantity and printing formulas for mixing
- C. Using paint toners and digital scale to pour paint formulas
- D. Creating and labeling sprayout cards to test color coverage and color match

VII. PAINT CODES & FORMULAS (14 hours, lab)

- A. Locating paint codes on vehicle, online and in reference books
- B. Looking up color formulas, setting quantity and printing formulas for mixing
- C. Using paint toners and digital scale to pour paint formulas

- D. Creating and labeling sprayout cards to test color coverage and color match

VIII. COLOR MATCHING & VARIANT FORMULAS (8 hours, lecture)

- A. Identifying solid, metallic, pearl and transparent tint (tri-coat) colors
- B. Looking at a color's face, flop and side tone
- C. Light sources for colormatching
- D. Describing color mismatch using standard industry adjectives
- E. Variant color formulas and variant decks
- F. Adjusting color by paint application method
- G. Adjusting color by the use of fast/slow chemical additives
- H. Adjusting color by spray environment temperature and/or humidity
- I. Adjusting color by formula alteration
- J. (NATEF Painting and Refinishing tasks: Section D, numbers 12-15)

IX. COLOR MATCHING & VARIANT FORMULAS (28 hours, lab)

- A. Identifying solid, metallic, pearl and transparent tint (tri-coat) colors
- B. Looking at a color's face, flop and side tone
- C. Light sources for colormatching
- D. Describing color mismatch using standard industry adjectives
- E. Variant color formulas and variant decks
- F. Adjusting color by paint application method
- G. Adjusting color by the use of fast/slow chemical additives
- H. Adjusting color by spray environment temperature and/or humidity
- I. Adjusting color by formula alteration
- J. (NATEF Painting and Refinishing tasks: Section D, numbers 12-15)

X. COLOR BLENDING & SPOT REPAIR (8 hours, lecture)

- A. Preparing a part for spot refinishing
- B. Masking and spraying techniques for blending panel edges, faces and body lines
- C. Chemical blending aides
- D. Tricks and techniques for hiding a blend
- E. Techniques and materials for blending clearcoat

XI. COLOR BLENDING & SPOT REPAIR (28 hours, lab)

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XII. REFINISHING COMPOSITE MATERIALS (4 hours, lecture)

- A. Preparation and application of undercoats for new fiberglass and carbon fiber panels
- B. Ultraviolet light damage and discoloration of uncoated composite materials
- C. Preparation and clearcoating of carbon fiber panels
- D. Preparation and application of undercoats for previously painted fiberglass and carbon fiber

	E. Non-structural repair of fiberglass panels F. Carbon fiber panel repair XIII. REFINISHING COMPOSITE MATERIALS (28 hours, lab) A. Preparation and application of undercoats for new fiberglass and carbon fiber panels B. Ultraviolet light damage and discoloration of uncoated composite materials C. Preparation and clearcoating of carbon fiber panels D. Preparation and application of undercoats for previously painted fiberglass and carbon fiber E. Non-structural repair of fiberglass panels F. Carbon fiber panel repair
Total Lecture Hours:	36
Total Laboratory Hours:	126
Total Hours:	162
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Using a practice panel or large paper with edge and circle targets, spray a blend that covers the edge/circle and fades evenly to no coverage within the dimensions of the panel.
Critical Thinking Assignment 1:	Create a written estimate for finish damage on a vehicle such as a scraped bumper cover, clearcoat failure due to ultraviolet light damage, or a key-scratched vehicle. Calculate a total for labor and for materials.
Critical Thinking Assignment 2:	Using a vehicle with a difficult-to-match color, locate a vehicle's color code and select a matching color variant from a deck. Look up and print the formula, mix the paint and create a sprayout card. Compare the sprayout card to the vehicle and describe any differences using industry standard adjectives.
Other Evaluation Methods:	Class Performance, Completion, Matching Items, Multiple Choice, Objective Exam, Performance Exams, Quizzes
Instructional Methods:	Demonstration, Discussion, Group Activities, Guest Speakers, Lab, Lecture
If other:	
Work Outside of Class:	Answer questions, Observation of or participation in an activity related to course content (such as theatre event, museum, concert, debate, meeting), Required reading, Study
If Other:	
Up-To-Date Representative Textbooks:	Joe Baker <u>Auto Collision Repair and Refinishing</u> . 4th ed. The Goodheart-Willcox Company, Inc., 2025.
Alternative Textbooks:	
Required Supplementary Readings:	
Other Required Materials:	Respirator

	Nitrile gloves
	Safety glasses
Requisite:	
Category:	
Requisite course(s): List both prerequisites and corequisites in this box.	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Patricia Fairchild
Date:	12/26/2013
Original Board Approval Date:	02/17/2015
Last Reviewed and/or Revised by:	Patricia Fairchild
Date:	10/19/2025

**Last Board Approval
Date:**

01/21/2026 eff FA 2026