



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	ACRP
Course Number:	5D
Descriptive Title:	Intermediate Automotive Refinishing II
Division:	Industry and Technology
Department:	Automotive Collision Repair/Painting
Course Disciplines:	Automotive Technology
Catalog Description:	This course provides instruction on production painting skills and maximizing shop throughput by controlling the painting environment through spray booth controls, temperature and humidity control, paint additives and gun adjustment. Additional topics covered include spot blending and applying tri-coat paints, flat paints, truck bedliner, single stage paints and interior paints. 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 Spray Booth Types & Equipment Students will be able to identify by name and differentiate between different kinds of paint spray booths and related equipment. &nbsp;SLO #2 Chemicals & Additives Students will be able to choose the correct speed and type of chemical additives for a variety of different weather conditions, repair job size, and job turnaround time expectations. SLO #3 Topcoat Paint Systems Students will be able to compare and contrast the three major types of topcoat paint systems for budget, speed of application, longevity, metallic layout, scratch resistance and ease of repair.	
Course Objectives:	1. Complete a comprehensive automotive collision repair/painting safety test with 100% accuracy. 2. Identify different spray booth and spray station types, equipment and air flow patterns. Compare and contrast the effectiveness of each for different shop production situations. 3. Identify environmental factors, application methods and chemical additives that can alter a paint's color match. List which ones make a paint look darker and which make it look lighter. 4. Compare and contrast the three most-used topcoat systems in automotive refinishing in terms of ease of application, color match quality, environmental impact, budget, durability and finish longevity. 5. Identify a factory tri-coat finish, look up the color formulas, mix a small quantity of base and midcoat, and create a letdown panel to test the color for coverage and color match. Label the letdown panel to record mixing and spraying data. 6. Compare and contrast different brands and types of flat finish paints in terms of rust prevention, ease of application, surface finish quality, level of gloss, longevity and ease of spot repair. 7. Identify and explain the difference between truck bedliner, undercoating, spray-on gravel guard and applied vinyl gravel guard. 8. Research and properly use automotive aerosols, cleaners and adhesion promoters to recolor or recondition an interior part or panel such as a door panel, visor, headliner, carpet, floormat or seat upholstery.	
Major Topics:	I. PERSONAL SAFETY AND SAFE LAB PRACTICES (4 hours, lecture) A. Shop tour B. General safety practices & personal safety equipment II. SPRAY BOOTH TYPES & EQUIPMENT (4 hours, lecture)	

- A. Booth regulations, permits and maximum volatile organic compound (VOC) output
- B. Enclosed booths - downdraft, semi-downdraft, cross-flow
- C. Spray stations - three-wall, curtained
- D. Booth fans, heaters, filters, lighting and controls
- E. Spray, purge and bake cycles

III. SPRAY BOOTH TYPES & EQUIPMENT (14 hours, lab)

- A. Booth regulations, permits and maximum volatile organic compound (VOC) output
- B. Enclosed booths - downdraft, semi-downdraft, cross-flow
- C. Spray stations - three-wall, curtained
- D. Booth fans, heaters, filters, lighting and controls
- E. Spray, purge and bake cycles

IV. PAINT APPLICATION CONDITIONS & CHEMICALS (4 hours, lecture)

- A. Compensating for temperature and humidity using paint application techniques
- B. Compensating for temperature and humidity using added air circulation
- C. Compensating for temperature and humidity using slow or fast hardener and/or reducer
- D. Use of chemical accelerator or retarder
- E. Pre-heating vehicles and parts
- F. Preventing/removing water damage (rain) to fresh paint

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VI. TOPCOAT COLOR SYSTEMS (8 hours, lecture)

- A. Single stage paints - benefits, characteristics, application methods
- B. Single stage blending and repair techniques
- C. Solvent basecoat/clearcoat paints - benefits, characteristics, application methods
- D. Solvent base blending and repair techniques
- E. Waterbase/waterborne paints - benefits, characteristics, application methods
- F. Waterborne blending and repair techniques
- G. [National Automotive Technicians Education Foundation (NATEF) Painting and Refinishing tasks: Section D, numbers 1-8, 16]

VII. TOPCOAT COLOR SYSTEMS (28 hours, lab)

- A. Single stage paints - benefits, characteristics, application methods
- B. Single stage blending and repair techniques
- C. Solvent basecoat/clearcoat paints - benefits, characteristics, application methods

- D. Solvent base blending and repair techniques
- E. Waterbase/waterborne paints - benefits, characteristics, application methods
- F. Waterborne blending and repair techniques
- G. (NATEF Painting and Refinishing tasks: Section D, numbers 1-8, 16)

VIII. TRI-COAT PAINTS (4 hours, lecture)

- A. Identification of factory-applied two stage and three-stage colors
- B. Custom pearl and kandy paints
- C. Tri-coat application techniques and letdown panels
- D. Color matching tri-coat paints
- E. Tri-coat panel repair, blending and spot repair
- F. (NATEF Painting and Refinishing tasks: Section D, number 11)

IX. TRI-COAT PAINTS (28 hours, lab)

- A. Identification of factory-applied two stage and three-stage colors
- B. Custom pearl and kandy paints
- C. Tri-coat application techniques and letdown panels
- D. Color matching tri-coat paints
- E. Tri-coat panel repair, blending and spot repair
- F. (NATEF Painting and Refinishing tasks: Section D, number 11)

X. TRUCK BEDLINER, UNDERCOATING & GRAVEL GUARD (4 hours, lecture)

- A. Automotive undercoating - application locations and techniques
- B. Spray-on gravel guard - application locations and techniques
- C. Applied vinyl gravel guard - application locations and techniques
- D. Truck bedliner - application techniques
- E. Automotive seam sealers and panel adhesives - preparing for topcoating
- F. Double-sided adhesive strips - application techniques

XI. TRUCK BEDLINER, UNDERCOATING & GRAVEL GUARD (14 hours, lab)

- A. Automotive undercoating - application locations and techniques
- B. Spray-on gravel guard - application locations and techniques
- C. Applied vinyl gravel guard - application locations and techniques
- D. Truck bedliner - application techniques
- E. Automotive seam sealers and panel adhesives - preparing for topcoating
- F. Double-sided adhesive strips - application techniques

XII. AUTOMOTIVE AEROSOL & INTERIOR PAINTS (8 hours, lecture)

- A. Underhood paints - color code location, mixing, application
- B. Cleaning and preparation of interior parts for refinish
- C. Aerosol paints for vinyl, plastic, leather, fabric and carpet - application techniques
- D. Aerosol paints for exterior trim and bumpers - prep and application techniques

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	C. Aerosol paints for vinyl, plastic, leather, fabric and carpet - application techniques D. Aerosol paints for exterior trim and bumpers - prep and application techniques
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:	Identify a factory tri-coat finish, look up the color formulas, mix a small quantity of base and midcoat, and create a letdown panel to test the color for coverage and color match. Label the letdown panel to record mixing and spraying data
Critical Thinking Assignment 1:	In small groups, compare and contrast the three most-used topcoat systems in automotive refinishing in terms of ease of application, color match quality, environmental impact, budget, durability and finish longevity. Present your conclusions to the class.
Critical Thinking Assignment 2:	Prepare a one-page report identifying the environmental factors, application methods and chemical additives that can alter a solvent-based paint's color match and make a paint look darker or lighter.
Other Evaluation Methods:	Class Performance, Completion, Laboratory Reports, 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).	
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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:	10/28/2025
Last Board Approval Date:	01/21/2026 eff FA 2026