Course Acronym:	ACRP
Course Number:	2B
Descriptive Title:	Automotive Refinishing Materials and Equipment
Division:	Industry and Technology
Department:	Automotive Collision Repair/Painting
Course Disciplines:	Automotive Collision Repair/Painting
Catalog Description:	This course helps students build confidence in and around a spray booth. Students will learn how to operate and maintain spray booths and compressed air supply systems, use chemicals and additives to outsmart weather and production demands, use color variant chips and formulas to improve color match, and improve their application of topcoat and undercoat materials. 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 a 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:	
CalGETC:	
Term:	
Other:	
Student Learning Outcomes:	**SLO #1 Chemicals and Additives** Students will be able to analyze a given repair job and choose the correct chemicals and additives needed for the job based on weather conditions, job scope, job budget, and job deadline. **SLO #2 Spray Booth Operation** Students will be able to set up, operate, and shut down a spray booth according to outside temperature and humidity, and the vehicle job and chemicals being sprayed. **SLO #3 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.
Course Objectives:	1. Complete a comprehensive automotive collision repair/painting safety test with 100% accuracy. 2. Select and utilize the correct safety equipment to prevent dermal or inhalation exposure to automotive refinishing solvents or paints. 3. Start up, operate and shut down automotive refinishing spray booths. 4. Differentiate between a cross-draft and down-draft spray booth. 5. Set up, operate and service a paint refinish air supply system. 6. Set up, operate and service automotive refinishing spray gun equipment. 7. Select, mix and apply automotive solvents, undercoat materials and topcoat paint systems.
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. Federal, state and local regulations for equipment, hazardous waste disposal and personal safety E. Respirators and fresh air systems - National Institute for Occupational Safety and Health (NIOSH) F. Remote air supply systems **II. AIR SUPPLY SYSTEMS (6 hours, Lecture)**

A. Safety practices
B. Characteristics of compressed air compressors
C. Dryers
D. Regulators
E. Delivery lines
F. Contamination
G. Service and maintenance

III. AIR SUPPLY SYSTEMS (15 hours, Lab)

A. Safety practices
B. Characteristics of compressed air compressors
C. Dryers
D. Regulators
E. Delivery lines
F. Contamination
G. Service and maintenance

IV. REFINISH SPRAY BOOTH (6 hours, Lecture)

A. Safety practices
B. Cross-draft booth
C. Down-draft booth
D. Work stations
E. Inlet filtration system
F. Exhaust filtration system
G. Fire prevention systems

V. REFINISH SPRAY BOOTH (30 hours, Lab)

A. Safety practices
B. Cross-draft booth
C. Down-draft booth
D. Work stations
E. Inlet filtration system
F. Exhaust filtration system
G. Fire prevention systems

VI. SPRAY EQUIPMENT (6 hours, Lecture)

A. Safety practices
B. Theory, parts, operation and maintenance of: siphon feed, gravity feed, pressure feed spray guns
C. High Volume Low Pressure (HVLP) equipment
D. Touch-up equipment

VII. SPRAY EQUIPMENT (45 hours, Lab)

A. Safety practices
B. Theory, parts, operation and maintenance of: siphon feed, gravity feed, pressure feed spray guns
C. High Volume Low Pressure (HVLP) equipment

D. Touch-up equipment

VIII. UNDERCOAT MATERIALS (6 hours, Lecture)

A. Safety practices
B. Sealers and non-sanding sealers
C. Seam sealers, gravel guard and rubberized undercoats
D. Adhesion promoters
E. Primer surfacers
F. Activated primers
G. Activated spot putties
H. Water base undercoats
I. Volatile Organic Compound (VOC) regulations and recording

IX. UNDERCOAT MATERIALS (45 hours, Lab)

A. Safety practices
B. Sealers and non-sanding sealers
C. Seam sealers, gravel guard and rubberized undercoats
D. Adhesion promoters
E. Primer surfacers
F. Activated primers
G. Activated spot putties
H. Water base undercoats
I. Volatile Organic Compound (VOC) regulations and recording

X. SOLVENTS & CLEANING CHEMICALS (6 hours, Lecture)

A. Safety practices
B. Selection and proper use of solvents
C. State and local regulation and disposal of chemicals

XI. SOLVENTS & CLEANING CHEMICALS (30 hours, Lab)

A. Safety practices
B. Components of solvents
C. Characteristics of solvents
D. Selection and proper use of solvents
E. State and local regulation and disposal of chemicals

XII. TOPCOAT COLOR SYSTEMS (9 hours, Lecture)

A. Safety practices
B. Components of paint
C. Paint systems: single stage, solvent base, waterborne, water base
D. Selection and application of a paint system
E. Compatibility of paint systems
F. VOC recording and calculation

XIII. TOPCOAT COLOR SYSTEMS (45 hours, Lab)

A. Safety practices

	B. Components of paint C. Paint systems: single stage, solvent base, waterborne, water base D. Selection and application of a paint system E. Compatibility of paint systems F. VOC recording and calculation **XIV. PAINT APPLICATION PROCEDURES & TECHNIQUES (12 hours, Lecture)** A. Safety practices B. Paint mixing **XV. PAINT APPLICATION PROCEDURES & TECHNIQUES (60 hours, Lab)** A. Safety practices B. Paint mixing C. Spray gun handling techniques 1. Pattern overlap 2. Triggering 3. Gun arcing 4. Surface distance 5. Gun speed
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:	Set up an HVLP gravity feed spray gun for refinishing a complete vehicle with urethane clear, then answer the following questions: 1. What safety equipment must be used and why? 2. What is the correct air pressure for the equipment and where is this information found? 3. What is the correct solvent or additive for 85 degree weather and why? Present results to the instructor for evaluation.
Critical Thinking Assignment 1:	Prepare a one-page written proposal as if you were a painter in a collision repair shop asking your boss, the shop owner, to purchase and install a new spray booth in the shop. Research the different types, brands and costs. Consider each booth's features as they apply to automotive refinishing in Southern California. Justify your booth choice. Submit written proposal to the instructor.
Critical Thinking Assignment 2:	Prepare a report detailing the sequence and procedure for application of a two-stage paint in spot refinishing operations. Submit report to instructor for evaluation.

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. Auto Collision Repair and Refinishing. 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 1A - Mask panels and jambs for primer. ACRP 5A - Mask a vehicle for primer, for jamb painting, and for exterior painting. Mask an area for spot refinishing. **Wash automotive surfaces prior to 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.
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 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:	11/12/2025
Last Board Approval Date:	01/21/2026
Effective Term:	FA 2026