



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	ACRP
Course Number:	4B
Descriptive Title:	Beginning Automotive Collision Repair II
Division:	Industry and Technology
Department:	Automotive Collision Repair/Painting
Course Disciplines:	Automotive Technology
Catalog Description:	This course provides instruction in automotive Metal Inert Gas (MIG) and Squeeze-Type Resistance Spot Welding (STRSW) and safety, automotive metals, metal finishing, large dent repair, corrosion protection, and vehicle disassembly and reassembly. 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:	3/18/2013
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	

	Term:	
	Other:	
	IGETC:	
	Term:	
	Other:	
Student Learning Outcomes:	SLO #1 I-CAR MIG Welds Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards. SLO #2 Large Dent Removal Students will be able to use dent removal equipment such as the Maxi welder or stud welder and Porto Power to remove a large dent from an automotive panel with no rear access. SLO #3 Vehicle Disassembly Procedures Students will be able to read a damage estimate and systematically tear down a panel for repair and refinish according to the repairs required by the estimate. Students will also be able to properly store and label the removed parts for later reassembly.	
Course Objectives:	1. Complete a comprehensive automotive collision repair/painting safety test with 100% accuracy. 2. Set up, operate and disassemble a MIG electric welding outfit. 3. Using a MIG welder, perform lap, butt and plug welds in flat and vertical positions that pass I-CAR qualification standards. 4. Hot shrink the metal of a mild steel body panel. 5. Metal finish the weld bead of a replaced steel body panel in preparation for paint using no fillers. 6. Choose the correct corrosion protection material for a given repair and explain why it is needed.	
Major Topics:	I. PERSONAL SAFETY AND SAFE LAB PRACTICES (4 hours, lecture) A. Shop tour B. General safety practices and personal safety equipment II. MIG WELDING (4 hours, lecture) A. Safety practices B. Nomenclature and settings C. Operation/application D. Steel welding E. I-CAR qualification standards F. (National Automotive Technicians Education Foundation (NATEF) Non-Structural Analysis and Repair tasks: Section E, numbers 1-18) G. (NATEF Structural Analysis and Repair tasks: Section D, numbers 1-18)	

III. MIG WELDING (14 hours, lab)

- A. Safety practices
- B. Nomenclature and settings
- C. Operation/application
- D. Steel welding
- E. I-CAR qualification standards
- F. (NATEF Non-Structural Analysis and Repair tasks: Section E, numbers 1-18)
- G. (NATEF Structural Analysis and Repair tasks: Section D, numbers 1-18)

IV. SQUEEZE-TYPE RESISTANCE SPOT WELDING (4 hours, lecture)

- A. Safety practices
- B. Nomenclature and settings
- C. Operation/application
- D. Steel welding
- E. (NATEF Non-Structural Analysis and Repair tasks: Section E, number 19)
- F. (NATEF Structural Analysis and Repair tasks: Section D, number 19)

V. SQUEEZE-TYPE RESISTANCE SPOT WELDING (14 hours, lab)

- A. Safety practices
- B. Nomenclature and settings
- C. Operation/application
- D. Steel welding
- E. (NATEF Non-Structural Analysis and Repair tasks: Section E, number 19)
- F. (NATEF Structural Analysis and Repair tasks: Section D, number 19)

VI. METAL WORKING AND FINISHING (4 hours, lecture)

- A. Safety practices
- B. Nomenclature of tools
- C. Hot shrinking, cold shrinking
- D. Stud welder/slide hammer use
- E. Abrasive materials
- F. Replacement panel fit-up and clamping
- G. (NATEF Non-Structural Analysis and Repair tasks: Section B, numbers 10-17)

VII. METAL WORKING AND FINISHING (28 hours, lab)

- A. Safety practices
- B. Nomenclature of tools
- C. Hot shrinking, cold shrinking
- D. Stud welder/slide hammer use
- E. Abrasive materials
- F. Replacement panel fit-up and clamping

- G. (NATEF Non-Structural Analysis and Repair tasks: Section B, numbers 10-17)

VIII. LARGE DENT REPAIR (8 hours, lecture)

- A. Safety practices
- B. Hammer and dollywork
- C. Using body spoons and picks
- D. Using the stud welder and slide hammer
- E. Using the Maxi welder and STRSW pull techniques
- F. Using a Porto-Power hydraulic ram

IX. LARGE DENT REPAIR (28 hours, lab)

- A. Safety practices
- B. Hammer and dollywork
- C. Using body spoons and picks
- D. Using the stud welder and slide hammer
- E. Using the Maxi welder and STRSW pull techniques
- F. Using a Porto-Power hydraulic ram

X. CORROSION PROTECTION (4 hours, lecture)

- A. Safety and clean-up practices
- B. Types
- C. Application

XI. CORROSION PROTECTION (14 hours, lab)

- A. Safety and clean-up practices
- B. Types
- C. Application

XII. VEHICLE DISASSEMBLY AND REASSEMBLY (8 hours, lecture)

- A. Safety practices
- B. Customer service/responsibility for
customer car and parts
- C. 'Bag and Tag' parts storage procedure
- D. Panel clips and hardware
- E. Bolt-on parts removal and installation
- F. Bolt-on panel alignment
- G. (NATEF Non-Structural Analysis and Repair tasks: Section A, numbers 2-10)

XIII. VEHICLE DISASSEMBLY AND REASSEMBLY (28 hours, lab)

- A. Safety practices
- B. Customer service/responsibility for
customer car and parts

	C. 'Bag and Tag' parts storage procedure D. Panel clips and hardware E. Bolt-on parts removal and installation F. Bolt-on panel alignment G. (NATEF Non-Structural Analysis and Repair tasks: Section A, numbers 2-10)
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:	Set up, operate and disassemble a MIG electric welding outfit.
Critical Thinking Assignment 1:	Using collision repair reference guides, determine what kind of metal a given vehicle panel or structural part is made. Construct a repair plan to repair or replace the part or panel.
Critical Thinking Assignment 2:	Based upon industry standards, analyze and explain in a one-page report how failing to follow manufacturer specifications during the repair process can endanger the lives of the vehicle passengers and expose the shop to legal action.
Other Evaluation Methods:	Class Performance, Completion, Multiple Choice, Objective Exam, Performance Exams, Quizzes, Written Homework
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:	Safety glasses/face shield Ear plugs/hearing protection Dust mask Leather gloves
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:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Patricia Fairchild
Date:	10/23/2012
Original Board Approval Date:	03/18/2013
Last Reviewed and/or Revised by:	Patricia Fairchild
Date:	12/01/2024
Last Board Approval Date:	01/21/2026 eff FA 2026