

Last updated: 10/98

SAN BERNARDINO VALLEY COLLEGE
COURSE OUTLINE

I. CATALOG DESCRIPTION:

Division: TECHNICAL Department: AUTOMOTIVE
Course ID Number: AUTO 044#3
Course Title: Automotive Collision Repair and Refinishing
Hours: Lecture 2 Hours/week
Lab 4 Hours/week
Units: 4
Course Description: Theory and practical experience in automotive collision repair and refinishing, with a focus on shop safety, automotive design, construction, refinishing, hand and power tools, South Coast Air Quality Management District (SCAQMD) laws and regulations, surface preparation, masking, refinishing equipment, refinishing techniques, detailing, and introduction to Metal Inert Gas (MIG) welding, oxyacetylene welding and brazing. This course may be used in preparation for the Automotive Service Excellence (ASE) National Test.
Prerequisite(s)/Corequisite(s): None

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: Three
Rationale for repeatability:

- A. The requirements of the Automotive Service Excellence (ASE) Certifications are continually updated and require tremendous amounts of knowledge and skills in order to pass the certification test. To remain certified, technicians must test every five years to become proficient with the changes in technology which occur every model year and often twice in a model year.
- B. The South Coast Air Quality Management District (SCAQMD) Rules and Regulations are being updated continually.
- C. The Occupational Safety and Health Act (OSHA) Rules and Regulations are being updated continually; for example, respirator users must be trained annually.

III. EXPECTED OUTCOMES FOR STUDENTS:

After completing this course, students will be able to:

- A. Identify general organization and facility safety rules.
- B. Identify shop safety rules including shop lay-out, fire extinguisher types and uses, combustible materials and storage area.
- C. Identify the safe use and care of tools, chemicals, and the correct protective clothing and safety gear for various situations.
- D. Describe automotive design, construction (uni-body/conventional).
- E. Identify trade terms and abbreviations.
- F. Describe location of identification/information tags and common hardware.

- G. Identify and operate hand and power tools including spray equipment, specialized tools, pneumatic tools, and hydraulic equipment.
- H. Describe safe usage of oxyacetylene equipment, set-up/shut down, and MIG welding equipment.
- I. Apply knowledge and skills attained to pass the Automotive Service Excellence (ASE) National Test.

IV. CONTENT:

- A. Introduction/Safety
 - 1. Industry overview/careers
 - 2. Shop safety/personal safety
 - 3. Fire safety
 - 4. Hazardous materials
 - 5. Laws/Regulations
- B. Tools
 - 1. Hand tools
 - 2. Air driven tools and equipment
 - 3. Hydraulic tools
 - 4. Basic measuring equipment
 - 5. Tools for metal working
- C. Welding
 - 1. Personal safety
 - 2. Oxyacetylene welding/brazing
 - 3. Metal Inert Gas welding
 - 4. Types of joints
 - 5. Cutting with oxyacetylene/plasma arc torch
- D. Automotive Construction
 - 1. History of automotive construction
 - 2. Types of automotive construction
 - 3. Identification of OEM parts
 - 4. Body panels
- E. Collision Repair Materials
 - 1. Abrasives
 - 2. Fillers
 - 3. Adhesives
 - 4. Solvents
- F. Minor Repairs
 - 1. Metal straightening fundamentals
 - 2. Plastic and fiberglass
 - 3. Filling dents with plastic fillers
 - 4. Retexturing plastic surfaces
- G. Undercoats
 - 1. Etching primers
 - 2. Wash primers
 - 3. Two component/three component primers
 - 4. Primer sealers
- H. Refinishing Fundamentals
 - 1. Protective equipment
 - 2. Spray guns
 - 3. Spray gun operation
 - 4. Air compressors
 - 5. Spray booths
- I. Detailing

1. Products
2. Equipment
3. Color sanding
4. Polishing

V. METHODS OF INSTRUCTION:

The methods of instruction include, but are not limited to:

- A. Lecture and direct laboratory demonstration by instructor
- B. Multi-media instruction
- C. Guided laboratory practice by the learner
- D. Group participation

VI. TYPICAL ASSIGNMENTS:

- A. Write a brief narrative describing the function and service of a High Volume Low Pressure (HVLP) spray gun.
- B. Remove and replace bolted/bonded and welded panels.
- C. Identify potential safety and environmental concerns associated with vehicle components and systems, i.e., Antilock Brake System (ABS), air bags Safety Restraint System(SRS), refrigerants, etc.
- D. Repair, fill and smooth depressed areas to contour with auto body plastic fillers

VII. EVALUATION:

- A. Methods of Evaluation:
 1. Grade assignments
 2. Graded tests
 3. Lab project
 4. Final exam
- B. Frequency of Evaluation:
 1. Twenty (20) exercises
 2. One (1) project
 3. Eight (8) tests
 4. One (1) final exam

VIII. TYPICAL TEXT(s):

Title: I-CAR Collision Repair
Author: James Duffy
Publisher: Prentice Hall
Date of Publication: 1996

Title: Principles of Auto Body Repair & Refinishing, 6th Edition
Author: Deroche & Hildebrand
Publisher: Prentice Hall
Date of Publication: 1996

Title: Motor Auto Body Repair, Third Edition
Author: Robert Scharff/James Duffy
Publisher: Delmar Publishers
Date of Publication: 1998

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: Project supplies

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Rationale: Rewriting the course title and description to reflect the latest changes in technology.