AUTO 186 Course Outline as of Summer 2010

CATALOG INFORMATION

Dept and Nbr: AUTO 186 Title: AUTOBODY REPAIR & PAINT
Full Title: Autobody Repair and Painting
Last Reviewed: 4/10/2006

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	2.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00 Total Student Learning Hours: 105.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	34 - 4 Enrollments Total
Also Listed As:	
Formerly:	

Catalog Description:
Through in-class instruction and hands-on shop activities, students will develop entry-level skills as auto body repair and refinish technicians. Course covers safe work practices, automobile construction, power and hand tools necessary to perform basic repairs, welding, metal working, body fillers, and custom painting. Techniques are applicable to automobile customizing.

Prerequisites/Corequisites:

Recommended Preparation:
Course Completion of IED 90A and Course Eligibility for ENGL 100 OR Course Eligibility for EMLS 100 (or ESL 100)

Limits on Enrollment:

Schedule of Classes Information:
Description: Students will develop entry-level skills as auto body repair and refinish technicians. Course covers safe work practices, automobile construction, power and hand tools necessary to perform basic repairs, welding, metal working, body fillers, and custom painting. Techniques are applicable to automobile customizing. (Grade or P/NP)

Prerequisites/Corequisites:
Recommended: Course Completion of IED 90A and Course Eligibility for ENGL 100 OR Course Eligibility for EMLS 100 (or ESL 100)
Limits on Enrollment:
Transfer Credit:
Repeatability: 4 Enrollments Total

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, the student will be able to:
1. Practice personal safety in an auto body shop setting.
2. Use hand and power tools related to auto body and collision repair in a proper and safe manner.
3. Demonstrate skill in gas and MIG (metal inert gas) welding to repair and weld joints.
4. Describe and apply different metal straightening techniques.
5. Demonstrate skill in surface preparation techniques to prepare vehicles for painting.
6. Discuss and demonstrate masking techniques for custom painting.
7. Perform measurements and calculations preparatory to sketching a custom design.
8. Mix and apply undercoats and topcoats properly utilizing refinishing equipment.
9. Identify and use the proper nomenclature for auto body parts.
10. Conduct internet research and locate information for collision repair.
11. Repeating students:
    a. complete increasingly complex auto body repairs
    b. demonstrate enhanced skills and proficiencies in application of techniques

Topics and Scope:

I. Elements involved in auto body repair and paint
   A. Necessity for collision repair

B. Body shop layout
C. Auto body personnel and function in a body shop
D. Writing a collision damage estimate

II. Paint and body shop safety
A. Personal safety
1. Respiration
2. Safety glasses
3. Welding helmet
B. Proper attire
C. Shop safety rules
D. Basic First Aid
C. Paint safety training

III. General hand tools
A. Identification
B. Safe use of hand tools

IV. Power Tools
A. Identification
B. Power tools and any other

V. Introduction to welding and cutting
A. MIG (metal inert gas) welding
1. Technique
2. Types of welds
B. Gas welding
1. Technique
2. Types of welds
C. Plasma cutter

VI. Metal working and metal straightening techniques
A. Rough out
B. Kinking
C. Cold shrinking
D. Heat shrinking
E. Finishing

VII. Body fillers
A. Plastic
B. Fiberglass
C. Use and application
D. When to use waterproof fillers

VIII. Surface preparation
A. Grit rating chart
B. Method of preparation for specific substrate
C. Metal conditioners and adhesion promoters
D. Solvent cleaners

IX. Masking for custom painting
A. Types of masking tapes and proper use
1. Fineline
2. Dart
3. Other
B. Types of masking paper and plastic sheeting
C. Masking techniques
1. Back masking
2. Reverse masking

X. Math and measuring for sketching a design

A. How to use a tape measure
B. How ratios, percentages, and fractions relate to auto body repair
C. Basic math review and exercises

XI. Mixing and applying undercoats
A. Importance of undercoats
B. Proper undercoat for specific substrate
C. Mixing and application technique for undercoats

XII. Mixing and applying topcoats
A. Purpose and characteristics of topcoats
B. Types of topcoats
1. Singlestage
2. Basecoat
3. Clearcoat
4. Multi-stage
C. Mixing and application and topcoats

XIII. Refinishing equipment
A. Types of spray equipment
1. Gravity
2. Suction
3. Pressure feed
B. Spray gun components
C. Spray techniques

XIV. Auto Construction
A. Types of materials used in vehicle construction
B. Vehicle construction
1. Body-over-frame
2. Unibody
3. Space frame
C. Autobody parts and proper nomenclature

XV. Fasteners
A. How fasteners hold a vehicle together
B. Types of fasteners used in vehicle construction
C. Bolts terminology (bolt strengths or grades)

XVI. Research for collision repair
A. Dealer sites
B. Insurance sites
C. Parts search

XVII. With course repeat
A. Increasingly complex auto body repairs
B. Enhanced skills and proficiencies in application of techniques

Assignment:

1. Reading: 10-25 pages per week in assigned textbook(s).
2. Complete paint safety training (online) per instructor's direction.
3. Lab activities:
a. tool use and safety
b. basic welding
c. fender project
d. using heat to work metal

e. major auto body repairs
f. minor auto body repairs
g. auto body accessories and trim
h. automotive painting
i. group and individual projects

4. Problem solving:
a. math calculations
b. sketch for a custom design

5. Research readings and written presentation on selected topic (2-5 pages).

6. Quizzes (4-8); performance evaluation; final exam.

7. Repeating students:
a. complete more complex repairs
b. demonstrate, through performance exams and skill demonstrations, enhanced skills and proficiencies.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written presentation.	Writing 10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Math calculations; sketch for custom design.	Problem solving 10 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Performance exams, Lab activities.	Skill Demonstrations 30 - 40%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion, Short answer.	Exams 30 - 40%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Duffy, James. Motor Auto Body Repair, Third Edition. Delmar Publishing, 2005.
Collision Repair 2000, Units 1-4 and 5-8. I-CAR (Inter-Industry Conference

on Auto Collision Repair).
Finish Matching, Restoring Pre-Accident Appearance, Parts 1 and 2. I-CAR (Inter-Industry Conference on Auto Collision Repair).
The Art of Refinishing. Standox Technical Data Guide, current edition.