

COURSE OUTLINE

Non-Structural Analysis and Damage Repair II

Course Description:

AB122 Non-Structural Analysis and Damage Repair II. 2 hours credit.
Prerequisite: AB 112 with a C or better. This course will enable the student to apply conventional techniques for unitized body construction. The emphasis will be placed on repairing auto panels to the manufacturer's specifications.

Course Relevance:

The principles learned in this course will allow the student to perform the essential tasks of analyzing, preparing, and then performing damage repair and adjustments. These tasks are essential to those aspiring to work in the auto body repair profession.

Required Materials:

Duffey, J., (2001). *I-CAR, Professional Automotive Collision Repair (2nd ed)*. Albany, NY: Delmar Publishing

Learning Outcomes:

The intention is for the student to be able to:

1. Apply personal and environmental safety practices
2. Demonstrate removing and replacing bolted, bonded, and welded panels.
3. Straighten and rough-out contours of damaged panel to a surface condition for body filling or metal finishing using power tools, hand tools, and stud welder.

Learning PACT

Through the student involvement in this course, the student will develop and document his/her achievement of the following PACT skills:

Primary skills (developed and documented):

1. Critical Thinking
 - Through the analysis of proper analysis and damage repair fundamentals, the student will recognize and understand the roles these fundamentals play in performing a quality analysis and repair
2. Problem Solving
 - Through the analysis of the damage repair processes, the student will be able to identify the strengths and/or limitations of each individual process and make decisions based on that knowledge.
3. Field-Related Training

- Through “In lecture/lab” exercises the student will be able to demonstrate their understanding of analyzing, preparing and repairing outer body panels

Secondary skills (developed but not documented):

Math
Reading

Assessment Tasks:

These learning outcomes and primary Learning PACT skills will be demonstrated by:

1. “Hands on” projects, performing auto collision repair
2. Projects that demonstrate the ability to recognize and utilize the correct techniques and equipment to perform collision repair
3. Projects that demonstrate the ability to identify problems and correct them using accepted collision repair principles

Course Content:

- I. Themes - Key recurring concepts that run throughout this course:
Safety, quality.
- II. Issues - Key issues that will be addressed in this course: areas of conflict that must be understood in order to achieve the intended outcome:
 - A. Planning an auto repair
 - B. Preparing surface for welding and/or repair
 - C. Straightening material
- III. Concepts – Key concepts that must be understood to address the issues:
 - A. Proper planning techniques of repair
 - B. Proper preparation of material and equipment
 - C. Proper performance of repair functions
- IV. Skills / Competencies - Actions that are essential to achieve the course outcomes:
 - A. Identify safe use and maintenance of general hand tools
 - B. Demonstrate safe use and maintenance of auto body hand tools
 - C. Identify the proper use of fire protection equipment
 - D. Use chemicals safely
 - E. Identify environmental effects of chemicals
 - F. Identify proper chemical disposal techniques
 - G. Identify information on and importance of MSD sheets

Learning Units:

- I. Body/paint shop work and safety procedures
- II. Understanding automotive construction
- III. Body shop hand tools
- IV. Body Shop power tools
- V. Automotive refinishing materials

- VI. Welding equipment and its use
- VII. Basic auto sheet metal work
- VIII. Minor auto body repairs

Learning Activities:

Learning activities will be geared towards lecture, demonstration, and performance. Classroom lecture is designed to enable the students to understand the key principles in auto body repair.

Grade Determination:

The student will be graded on satisfactory completion of assessment tasks (learning activities), attendance, and written examination.