

Learning Assessment of Core Outcomes
Suggested Focus 2009–2010: Critical Thinking and Problem Solving

SAC Name: Auto Collision Repair

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1. Please describe your plan of action for 2009–2010 Academic Year:

Objective Structured Shop labs & Demonstrations

The objective of these shop Labs is to show that students can correctly complete the assigned lab projects without coaching or instruction.

The students must choose and gather necessary items, materials, supplies, to complete the assigned project. The student must then correctly complete the assigned project in a timely manner.

- Demonstrate proper damaged preparation and set up for frame pulls and measurement.
- Demonstrate proper panel repair including; metal finishing, grinding and feathering techniques, and plastic filler repair.

2. When your project is completed, please describe the method(s) you used:

AB 105 Frame Analysis & Repair Lab Final Project: Set up damaged vehicle for frame pulls and measurement (Pit Stop Competition)

1. Students **must** wear proper shop attire and eye protection.
2. Students will work in teams of 3 or 4 members. (Teamwork is essential)
3. Gather necessary equipment and tools.
4. Lab event will be timed. (Preferred time: 30 mins. or less)
5. Teams will demonstrate best use of team members and most efficient organization of steps involved.
6. Side of vehicle lifted safely and evenly using airbag jack and center of gravity.
7. Two wheels removed and properly labeled.
8. Vehicle properly set on frame bench unibody pinch weld clamps at vehicle specific placement.
9. Repeat last three procedures on opposite side of vehicle.
10. Pinch weld clamps tightened using proper tools, then clamp base bolts.
11. Reverse order of steps after instructor's verification.
12. Wheel lug nuts must be tightened to manufacturer's torque specifications.
13. Project is complete after all tools and clamps are returned to proper location.

Lab Project is scored on 10 areas: 3 achievement levels, each for a maximum total of 30 points. (See attached Auto Collision scoring rubric).

Critical Thinking and Problem Solving for this event -

1. The students must quickly plan the process to accomplish the task in a logical and efficient order while making use of all team members.
2. The students must solve the problem of weight distribution and center of gravity as they lift the vehicle one side at a time with one airbag jack. They must consider the weight and position of the vehicle's engine. This needs to be done safely.
3. The students must figure out the strongest position for the frame bench clamping system for maximum holding strength during the frame repairs.

AB 205 Technical Skills/Complete Collision Repair Lab Final Project: Panel Repair, metal finishing, grinding and feathering techniques, and plastic filler repair. (Panel Competition)

1. Students **must** wear proper shop attire and eye protection.
2. Students will work independently.
3. Gather necessary equipment and tools.
4. Lab event will be timed. (Preferred time: 30 mins. or less)

5. Students will demonstrate best use of time and most efficient organization of steps involved.
6. Demonstrate grinding skills and patterns.
7. Demonstrate panel preparation.
8. Demonstrate metal finishing technique and skills.
9. Demonstrate dent rough-out.
10. Demonstrate plastic filler use, sanding skills and feathering skills.

Lab Project is scored on 10 areas: 3 achievement levels, each for a maximum total of 30 points. (See attached Auto Collision scoring rubric).

Critical Thinking and Problem Solving for this event -

1. The student must quickly plan the process to accomplish the task in a logical and efficient order to make best use of time.
2. The student must overcome the metal stretching problems associated with a dent in sheet metal and dent rough-out and repair.
3. The student must overcome plastic body filler undercutting during the sanding and shaping process. They will use visual cues and proper hand position and feeling techniques.
4. The student must solve the problem of heavy grinding marks in the metal by making use of proper grinding techniques.

3. What did you learn?

AB 105 Frame Analysis & Repair: Students are being trained to accomplish industry skills that relate directly to entry level jobs in the Collision Repair Industry.

AB 205 Technical Skills/Complete Collision Repair: Students are being trained to accomplish industry skills that relate directly to entry level jobs in the Collision Repair Industry.

4. What changes, if any, are you making or recommending as a result?

The Auto Collision Repair SAC proposes to expand this style of evaluation method to include all lab classes in the program fall term 2010. The purpose of this proposal is to balance the emphasis in determining the student's entry level skills in the Auto Collision Repair and Painting courses to meet department objectives.

5. Follow up in 2010-2011 based on any changes you have made:

Continue to evaluate the process of testing. Design tests to correlate courses more efficiently that will reflect desired outcome prior to Cooperative Education in the industry work place.

6. Explanation: Each SAC is asked to do some learning assessment activity focused on the above outcome (or other, if appropriate). The idea is that each SAC does something in order to help the college understand how we individually or collectively are helping students to achieve this core outcome.

For Core Outcomes, see: <http://www.pcc.edu/resources/academic/core-outcomes/index.html>)

For further guidance, see: <http://www.pcc.edu/resources/academic/learning-assessment1>
(Dates: January 15, 2010: #1 completed; May 14, 2010: 2-4 completed)

Auto Collision Scoring Rubric

Achievement Levels:

- 1: Observed - Instruction via classroom presentation (PowerPoint, video, lecture, or reading assignment) or Observed - Instruction via shop demonstration
 - Understands basic elements of objective or problem at hand
 - Reorganizes information at hand and incorporates into knowledge base
 - Uses problem solving vocabulary appropriately

- Demonstrates understanding and articulates problem solving process

2: Completed With Assistance - Shop labs and Demonstrations

- Applies a problem solving process within the framework of the specific lab assignment
- Applies instructor selected skills and concepts to the lab and problem situation
- Uses industry vocabulary appropriately

3: Completed Independently or With Group or Team

- Refines self-awareness as a problem solver
- Refines specific lab skill set
- Able to complete shop lab using self evaluations
- Demonstrates critical thinking and complete knowledge of lab
- Examines various approaches to accomplish goal
- Ability to complete lab assignment to a satisfactory level in a timely manor