

Course or Program Assessment Summary

http://academic.cuesta.edu/sloa/docs/Course_and_Program_Assessment_Summary_F_2011.docx

This form can be used to record SLO assessment plans and results for courses or programs. It is recommended that this document be stored on a group drive, or in MyCuesta.

Division: **Engineering& Technology** Program: **Auto Body / Collision Repair** Date: **12/29/2014**

v. 3 2012

Courses in program, or course: **Course ATCH 170 Auto Body Repair 1**

Faculty involved with the assessment and analysis: **Ron McDonald, & Henry Wintergerst.**

Course-to-program outcome mapping document** is completed Yes **X** No _____

<p>1 Student Learning Outcome Statements</p> <p><input type="checkbox"/> Program</p> <p><input checked="" type="checkbox"/> Course</p>	<p>SLO 1: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body repair and the collision industry, including, but not limited to: PPE, handling, storage, and proper use of materials associated within the Auto Collision Industry.</p> <p>SLO 2: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to operation and maintenance of tools and equipment used to repair auto collision damage.</p> <p>SLO 3: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Define terms and characteristics of automotive steel. Define terms and characteristics of automotive steel. Describe metal damage and identify variables that affect the severity, type of damage, and repair decisions. Describe Metallurgy related to auto body repair including the principles of work hardening, stress relieving, changes in grain structure and physical properties of metals used in automobiles and light trucks. Define metalworking terms, understand how to recognize, locate high and low spots, metalworking procedures, and manipulation of sheet metal straightening techniques.</p> <p>SLO 4: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Describe, define the measuring of vehicles and making comparisons to vehicle dimensions, specifications, and diagrams to determine the amount of misalignment before a repair and the degree of quality control during the straightening process.</p> <p>SLO 5: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Identify different types of vehicle construction. Identify unibody, body over frame and space frame construction. Describe types of materials used for vehicle construction. Define types of damage affecting repair/ replace decisions.</p> <p>SLO 6: Students will acquire technical knowledge and develop critical thinking capabilities in</p>
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	<p>analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Identify direct and indirect damage Identify damage reports, estimating guides, terms, and considerations involved with the writing of an estimate. Identify customer information and relationships.</p> <p>SLO 7: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Methods for repairing plastics and fiberglass panels used in auto body construction.</p> <p>SLO 8: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Metal inert gas welding with continuous, spot, and stitch modes on auto body sheet metal. Develop skills with Oxy-acetylene torch use and heat shrinking auto body sheet metal.</p> <p>SLO 9: Exemplify professional behaviors and traits necessary to be successful in the Auto Collision Industry.</p>
<p>2 Assessment Methods Plan (identify assessment instruments, scoring rubrics, SLO mapping diagrams)</p>	<p>SLO 1: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body repair and the collision industry, including, but not limited to: PPE, handling, storage, and proper use of materials associated within the Auto Collision Industry.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of safety tests with a 95% or higher marks. Completed orientation of personal protective equipment utilized in laboratory (100%). Completion of job safety orientation of industry tools, equipment, and materials utilized in the course (100%). 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision -Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 2: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to operation and maintenance of tools and equipment used to repair auto collision damage.</p> <p>Assessment Method:</p>

	<ol style="list-style-type: none"> 1) Completion of classroom and laboratory assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on maintenance assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 3: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Define terms and characteristics of automotive steel. Define terms and characteristics of automotive steel. Describe metal damage and identify variables that affect the severity, type of damage, and repair decisions. Describe Metallurgy related to auto body repair including the principles of work hardening, stress relieving, changes in grain structure and physical properties of metals used in automobiles and light trucks. Define metalworking terms, understand how to recognize, locate high and low spots, metalworking procedures, and manipulation of sheet metal straightening techniques.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory metalworking coupons, tasks and other related assignments with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 4: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Describe, define the measuring of vehicles and making comparisons to vehicle dimensions, specifications, and diagrams to determine the amount of misalignment before a repair and the degree of quality control during the straightening process.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory measuring sheets, tasks and other related assignments with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands
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	<p>on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists.</p> <ol style="list-style-type: none"> 3) Student surveys <p>SLO 5: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Identify different types of vehicle construction. Identify unibody, body over frame and space frame construction. Describe types of materials used for vehicle construction. Define types of damage affecting repair/ replace decisions.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory identification tasks and other related assignments with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 6: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Identify direct and indirect damage Identify damage reports, estimating guides, terms, and considerations involved with the writing of an estimate. Identify customer information and relationships.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory estimating sheets, tasks and other related assignments with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 7: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Methods for repairing plastics and fiberglass panels used in auto body construction.</p>
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	<p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory plastic coupons, fiberglass tasks, and other related assignments with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 8: Students will acquire technical knowledge and develop critical thinking capabilities in analysis and diagnose of safe and efficient methods for repairing auto body collision damage, including, but not limited to: Metal inert gas welding with continuous, spot, and stitch modes on auto body sheet metal. Develop skills with Oxy-acetylene torch use and heat shrinking auto body sheet metal.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory welding coupons, tasks, and other related assignments with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 9: Exemplify professional behaviors and traits necessary to be successful in the Auto Collision Industry.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Professionalism and Participation assessments by professors evaluated by: <ol style="list-style-type: none"> a. Appear on time for class. (80% or higher) b. Turn in assignments on time. (80% or higher) c. Exhibits neatness and order while working in the laboratory. (90% or higher) d. Care of tools and equipment while participating in functions of the lab. (99% or higher) e. Participation in activities throughout the semester. (80% or higher) f. Effectively manages time on assigned tasks. (85% or higher) 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation
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		(NATEF) Task lists. 3) Student surveys.																																																												
3	Assessment Administration Plan (date(s), sample size or selection of course sections, scoring procedures, etc.)	Assessments are ongoing each semester, to successively enhanced, identify improvements for students and the program. Assessments are addressed to help replicate the rapidly technological developments of the industry. Continue with sheet metal manipulation with hammer and dolly work. Stay with the perseverance of laboratory tasks assessments as per Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) tasks lists.																																																												
4	Assessment Results Summary (summarize Data)	<p>Course tasks and assignments. AS DEGREE Student Survey Data. SLO Assessment Tool from Student Survey.</p> <p>Course tasks and assignments results as per semester lab assignments and tests rubrics, concluded that lab exercises can be quickly adjusted as the semester progresses to meet student deficiencies. Improvements have been made with finishing fillers and metal working techniques. Stands have been built to be utilized by students for metal working tasks. As per advisory committee input competencies in metal working skills and filler finishing set highly valued employees apart from others.</p> <p style="text-align: center;">Evaluation Table Data: Student ATCH 170 Course SLO's assessments from lab activities and tests results (Fall 2014)↓</p> <table border="1"> <thead> <tr> <th>Students</th><th>Very Well</th><th>Fairly Well</th><th>Somewhat</th><th>Slightly</th><th>Poor</th></tr> </thead> <tbody> <tr> <td>SLO#1 safety</td><td>95%</td><td>4%</td><td>1%</td><td></td><td></td></tr> <tr> <td>SLO#2 tools and equipment</td><td>75%</td><td>18%</td><td>3%</td><td>3%</td><td></td></tr> <tr> <td>SLO#3 metalworking</td><td>30%</td><td>60%</td><td>9%</td><td></td><td>3%</td></tr> <tr> <td>SLO#4 measuring vehicles</td><td>90%</td><td>6%</td><td>3%</td><td></td><td></td></tr> <tr> <td>SLO#5 vehicle construction</td><td>96%</td><td>3%</td><td></td><td></td><td></td></tr> <tr> <td>SLO#6 estimating</td><td>12%</td><td>81%</td><td></td><td>6%</td><td></td></tr> <tr> <td>SLO#7 plastic repair</td><td>87%</td><td>9%</td><td>3%</td><td></td><td></td></tr> <tr> <td>SLO#8 welding</td><td>78%</td><td>21%</td><td></td><td></td><td></td></tr> <tr> <td>SLO#9 professionalism</td><td>60%</td><td>18%</td><td>12%</td><td>6%</td><td>3%</td></tr> </tbody> </table>	Students	Very Well	Fairly Well	Somewhat	Slightly	Poor	SLO#1 safety	95%	4%	1%			SLO#2 tools and equipment	75%	18%	3%	3%		SLO#3 metalworking	30%	60%	9%		3%	SLO#4 measuring vehicles	90%	6%	3%			SLO#5 vehicle construction	96%	3%				SLO#6 estimating	12%	81%		6%		SLO#7 plastic repair	87%	9%	3%			SLO#8 welding	78%	21%				SLO#9 professionalism	60%	18%	12%	6%	3%
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5	Discussion of Assessment Procedure and Results, and Effectiveness of Previous Improvement Plans	Assessments made from tasks in the lab, projects, surveys, and tests scores indicate students are retaining and developing incremental skill attributes for the preparation of success for an entry level technician in the industry. It was concluded that developing SOP's (standard operating procedures) lab sheets helped students with tasks and streamlined standardized procedures and expectations of the students. Additionally, it was decided to continue with the student assessments and/or questionnaire at the conclusion of the course, to assist in quantifying student perspectives toward assessments of certain tasks, marks, and/or procedures. Work on professionalism behaviors continues to be challenging. Traits expected in industry are of importance needs to be continually reinforcement to students. Student areas of safety, vehicle construction, welding, and plastic repair continue to make high marks.
6	Recommended Changes & Plans for Implementation of Improvements	From analysis of assessments, some planned course improvement considerations: ATCH 170 course (beginning auto body repair)- conclusions were made after staff evaluations of assignments, that more emphasis will be put on recognition of high and low spots and how to block. Students need to show competency before tackling a project on a vehicle. Continuation with metal working techniques to minimize filler application is of great significance. After the use of the metalworking stands, doing different procedures with multiple tasks, it was concluded that these stands were very beneficial, yet very challenging for students. Students did find metalworking tasks on a flat panel problematic but enlightening. Once metal manipulation techniques and shrinking are mastered student build confidence and are less stressed working with the stands or with metal in general. Metal pieces of 22 gauge cold rolled mild steel was used which allowed easier hammer and dolly attainment, rather than 18 gauge. Ideally the use of AK type sheet metal which is much more malleable would be the best material for this, but it is not available in our local. Perhaps using damaged fenders in conjunction with the metal panel may yield better results? Stamped feature lines on fenders help control oil canning, so fenders are more advantageous in that regard. Students did like the ability to take their "projects" home, indoctrinating personal pride, accomplishment, self-esteem and success. Evidence was found that most of the students took a great deal of pride in finishing and painted these panels. Sheet metal welding labs will continue; however more emphasis shall be directed towards heat control. Changes of various vehicle construction materials will also need to be introduced with the advent of aluminum going forth from the OE manufactures. Also vehicle sensor and safety systems awareness shall be increased during instruction. Procedures and various processes for lab assignments with SOP's for students will help for direction. Bottom line is that this field is constantly changing with an even greater accelerated rate, introduction and awareness is a continuum that will have to be persistently chased.
7	Description or evidence of dialog among course or program-level faculty about assessment plan and results	The conclusions derived from the use of these metal working stations were done from students, Henry Wintergerst, and Ron McDonald. Welding and plastic repair coupons work well and will continue. Discussion established that it is imperative for students to show competency in the discipline area(s) before moving on to other phases or topics if success is going to be achieved in industry. Group measuring seems to work best for students. Estimating damage will continue to be emphasized. Utilizing vehicle projects to hone skills work as long as competencies are met prior.
		Other conversations transpired with industry owners, managers, technicians and other faculty in other related discipline(s) has generated many ideas and strategies. These ideas have been brought up at program and/or division meetings that have lead to dialogue at advisory committee meetings. This dialogue has been constructive and productive for the course and program. Utilization of recent metal working stands helps course assessment tasks.

course and program level outcomes are required by ACCJC to be aligned. Each program needs to complete a program map to show the alignment. See examples of completed CPAS and program mapping documents are available at <http://academic.cuesta.edu/sloa>

Course or Program Assessment Summary http://academic.cuesta.edu/sloa/docs/Course_and_Program_Assessment_Summary_F_20

This form can be used to record SLO assessment plans and results for courses or programs. It is recommended that this document be stored on a group drive, or in MyCuesta.

Division: **Engineering& Technology** Program: **Auto Body / Collision Repair** Date: **12/30/2014**

v.

Courses in program, or course: **Course ATCH 175 Automotive Painting**

Faculty involved with the assessment and analysis: **Ron McDonald, Henry Wintergerst**

Course-to-program outcome mapping document** is completed Yes **X** No _____

1	Student Learning Outcome Statements <input type="checkbox"/> Program <input checked="" type="checkbox"/> Course	<p>SLO 1: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body repair and the collision industry, including, but not limited to: PPE, handling, storage, and proper use of materials associated within the Auto Collision Industry.</p> <p>SLO 2: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Identify refinish damage reports, estimating guides, terms, and refinish considerations involved with the writing of a refinish and collision estimate. Identify customer information and relationships.</p> <p>SLO 3: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Identify different types of hazardous chemicals, MSDS, handling, storage; exposure risks and other considerations of refinish material hazardous waste. Identifying necessary PPE associated with auto body refinishing. Demonstrate safe and efficient methods for handling and using automotive refinishing materials. Demonstrate safe and sane handling of chemicals before, during, and after the job, including the handling and disposal of hazardous wastes</p> <p>SLO 4: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Operate and maintain tools and equipment used in the automotive refinishing materials. Demonstrate proper care and maintenance of auto refinishing equipment. Demonstrate correct adjustment of air pressures and spray gun adjustments for spray pattern and material (paint) volume being applied to the surface.</p> <p>SLO 5: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Analyze the surface condition prior to starting the refinishing procedure. Demonstrate chemical cleaning of the surface to be refinished. Prepare the surface prior to the application of various types</p>
		<p>of undercoats. Demonstrate scratch removal prior to refinishing and apply proper sanding and feather-edging techniques.</p> <p>SLO 6: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Apply techniques for various undercoat systems. Apply techniques relating to various types of topecoat systems. Recognize and evaluate any paint abnormalities both during the application phase of the job and after the job is completed.</p> <p>SLO 7: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Demonstrate color adjustment (tinting) for paint matching using either gun technique or tinting or both.</p> <p>SLO 8: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Apply troubleshooting techniques for solving paint problems.</p> <p>SLO 9: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Demonstrate and apply various surface preparation methods prior to buffing and polishing. Demonstrate and apply various buffing and polishing techniques.</p> <p>SLO 10: Students shall exemplify professional behaviors and traits necessary to be successful in the Auto Collision Industry.</p>
2	Assessment Methods Plan (identify assessment instruments, scoring rubrics, SLO mapping diagrams)	<p>SLO 1: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body repair and the collision industry, including, but not limited to: PPE, handling, storage, and proper use of materials associated within the Auto Collision Industry.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of safety tests with a 95% or higher marks. Completed orientation of personal protective equipment utilized in laboratory (100%). Completion of job safety orientation of industry tools, equipment, and materials utilized in the course (100%). 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys.

	<p>SLO 2: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Identify refinish damage reports, estimating guides, terms, and refinish considerations involved with the writing of a refinish and collision estimate. Identify customer information and relationships.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom and laboratory estimate sheets assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 3: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Identify different types of hazardous chemicals, MSDS, handling, storage; exposure risks and other considerations of refinish material hazardous waste. Identifying necessary PPE associated with auto body refinishing. Demonstrate safe and efficient methods for handling and using automotive refinishing materials. Demonstrate safe and sane handling of chemicals before, during, and after the job, including the handling and disposal of hazardous wastes</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other related paint material assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 4: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Operate and maintain tools and equipment used in the automotive refinishing materials. Demonstrate proper care and maintenance of auto refinishing equipment. Demonstrate correct</p>
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	<p>adjustment of air pressures and spray gun adjustments for spray pattern and material (paint) volume being applied to the surface.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other refinish equipment related assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 5: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Analyze the surface condition prior to starting the refinishing procedure. Demonstrate chemical cleaning of the surface to be refinished. Prepare the surface prior to the application of various types of undercoats. Demonstrate scratch removal prior to refinishing and apply proper sanding and feather-edging techniques.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other surface preparation related assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 6: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Apply techniques for various undercoat systems. Apply techniques relating to various types of topcoat systems. Recognize and evaluate any paint abnormalities both during the application phase of the job and after the job is completed.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other refinishing techniques/ material differentiation related assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF)
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		<p>Task lists.</p> <p>3) Student surveys.</p> <p>SLO 7: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Demonstrate color adjustment (tinting) for paint matching using either gun technique or tinting or both.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other related color matching assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 8: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Apply troubleshooting techniques for solving paint problems.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other paint problem related assignments and tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 9: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Demonstrate and apply various surface preparation methods prior to buffing and polishing. Demonstrate and apply various buffing and polishing techniques.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory, and other buffing/ polishing related assignments and tasks with 70% or higher marks.
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		<ol style="list-style-type: none"> 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 10: Students shall exemplify professional behaviors and traits necessary to be successful in the Auto Collision Industry</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Professionalism and Participation assessments by professors evaluated by: <ol style="list-style-type: none"> a. Appear on time for class. (80% or higher) b. Turn in assignments on time. (80% or higher) c. Exhibits neatness and order while working in the laboratory. (90% or higher) d. Care of tools and equipment while participating in functions of the lab. (99% or higher) e. Participation in activities throughout the semester. (80% or higher) f. Effectively manages time on assigned tasks. (85% or higher) 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys.
3	Assessment Administration Plan (date(s), sample size or selection of course sections, scoring procedures, etc.)	<ol style="list-style-type: none"> 1) All Auto Body courses have SLO's and assessments identified. Assessments are ongoing each semester, to successively enhanced, identify improvements for students and the program. Also, assessments are addressed to help replicate the rapidly technological developments of the industry.
4	Assessment Results Summary (summarize Data)	<p>Course tasks and assignments.</p> <p>AS DEGREE Student Survey Data.</p> <p>SLO Assessment Tool from Student Survey.</p> <p>Course tasks and assignments results as per semester lab assignments and tests rubrics, concluded that lab exercises can be quickly adjusted as the semester progresses to meet student deficiencies. A mark improvement was noted in water borne paint application and tinting.</p>

Evaluation Table Data: Student

ATCH 175 Course SLO's survey (Sp2014) ↓

		Very Well	Fairly Well	Somewhat	Slightly	Poor
	SLO#1 safety	14	1			
	SLO#2 Refinish estimating	10	5			
	SLO#3 Material handling & storage	12	3			
	SLO#4 Refinishing equipment	12	3			
	SLO#5 Surface Prep	14	1			
	SLO#6 Evaluate paint abnormalities	14	1			
	SLO#7 Color adjustment	10	3	2		
	SLO#8 Paint problems	8	6	1		
	SLO#9 buffing and polishing	13	2			
	SLO#10 Professional behaviors	11	4			
5	Discussion of Assessment Procedure and Results, and Effectiveness of Previous Improvement Plans	Assessments made from tasks in the lab, projects, surveys, and tests scores indicate students are retaining and developing incremental skill attributes for the preparation of success for an entry level technician in the industry. It was concluded that developing SOP's (standard operating procedures) for student tasks help standardize procedures and expectations of students. Additionally, it was decided to continue with the student assessments and/or questionnaire at the conclusion of the course, to assist in quantifying student perspectives toward assessments of certain tasks, marks, and/or procedures.				
6	Recommended Changes & Plans for Implementation of	From analysis of assessments, planned course improvement considerations:				

	Improvements	ATCH 175 course (beginning automotive refinishing / painting) discussions concluded that the continuation of expanding water born techniques, color matching exercises, empowering frequent additional masking tasks, continue current polishing tasks and including blocking tasks during mid-semester. Supplementary blending techniques may be reviewed for future semesters. Integrating, buffing, clean-up and final detail to the instruction.
7	Description or evidence of dialog among course or program-level faculty about assessment plan and results	Discussions from visits with industry owners, managers, technicians and other faculty in other related discipline(s) have generated many ideas and strategies. These ideas have been brought up at program and/or division meetings that have lead to dialogue at advisory committee meetings. This dialogue has been constructive and productive for the course and program. Some business owners mentioned detailing as an entry level priority.

**Course and program level outcomes are required by ACCJC to be aligned. Each program needs to complete a program map to show the alignment. See examples of completed CPAS and program mapping documents are available at <http://academic.cuesta.edu/sloa>

Course or Program Assessment Summary http://academic.cuesta.edu/sloa/docs/Course_and_Program_Assessment_Summary_F_2011.docx

This form can be used to record SLO assessment plans and results for courses or programs. It is recommended that this document be stored on a group drive, or in MyCuesta.

Division: **Engineering& Technology** Program: **Auto Body / Collision Repair** Date: **5/26/2014**

v. 3 2012

Courses in program, or course: **Course ATCH 177 Advance Automotive Painting**

Faculty involved with the assessment and analysis: **Ron McDonald, & Henry Wintergerst**

Course-to-program outcome mapping document** is completed **Yes X** No _____

1	<p>Student Learning Outcome Statements</p> <p><input type="checkbox"/> Program</p> <p><input checked="" type="checkbox"/> Course</p>	<p>SLO 1: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Devise a refinish plan to follow during the painting process.</p> <p>SLO 2: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Refinish a vehicle completely according to the refinish plan.</p> <p>SLO 3: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Define color theory as it relates to automotive painting.</p> <p>SLO 4: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Demonstrate color matching techniques.</p> <p>SLO 5: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to Describe custom painting techniques.</p> <p>SLO 6: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Perform interior and exterior detail using body shop safe products.</p> <p>SLO 7: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Identify refinish damage reports, estimating guides, refinishing terms, and considerations involved with the writing a refinish repair estimate. Identify customer information and relationships.</p>
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		<p>SLO 8: Students will acquire technical knowledge and develop critical thinking, safety of auto body refinish repair and the collision industry, including, but not limited to: local and federal refinish materials regulations, and understand components of SDS. Identify different types of hazardous chemicals, categories of, handling, storage, exposure risks and other considerations of hazardous waste. Identify PPE requirements.</p> <p>SLO 9: Students shall exemplify professional behaviors and traits necessary to be successful in the Auto Collision Industry.</p>
2	<p>Assessment Methods Plan (identify assessment instruments, scoring rubrics, SLO mapping diagrams)</p>	<p>SLO 1: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Devise a refinish plan to follow during the painting process.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of refinish plan for painting a vehicle with a decomposed clear coat. (complete/various top surfaces) Competencies of a 75% or higher marks on a written plan. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 2: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Refinish a vehicle completely according to the refinish plan.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory assignments, projects, and other job asks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 3: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Define color theory as it relates to automotive painting.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory and other related color theory assignments/ tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists.

		<p>3) Student surveys.</p> <p>SLO 4: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Demonstrate color matching techniques.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory spray-outs, tints and other related color matching assignments/ tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 5: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to Describe custom painting techniques.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory and other related custom paint, layouts, techniques , and airbrush assignments/ tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 6: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Perform interior and exterior detail using body shop safe products.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory and other related polishing, cleaning, detailing and vehicle delivery preparation assignments/ tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 7: Students will acquire technical knowledge and develop critical thinking regarding safety in and around auto body refinish repair and the collision industry, including, but not limited to: Identify refinish damage reports, estimating guides, refinishing terms, and considerations involved with the writing a refinish repair estimate. Identify customer information and relationships.</p>
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		<p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of classroom, laboratory and other related estimating procedures, such as but not limited to: damage time analysis and p-pages assignments/ tasks with 70% or higher marks. 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys. <p>SLO 8: Students will acquire technical knowledge and develop critical thinking, safety of auto body refinish repair and the collision industry, including, but not limited to: local and federal refinish materials regulations, and understand components of SDS. Identify different types of hazardous chemicals, categories of, handling,</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Completion of safety tests with a 95% or higher marks. Completed orientation of personal protective equipment utilized in laboratory (100%). Completion of job safety orientation of industry tools, equipment, and materials utilized in the course (100%). 1) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 2) Student surveys. <p>SLO 9: Exemplify professional behaviors and traits necessary to be successful in the Auto Collision Industry.</p> <p>Assessment Method:</p> <ol style="list-style-type: none"> 1) Professionalism and Participation assessments by professors evaluated by: <ol style="list-style-type: none"> a. Appear on time for class. (80% or higher) b. Turn in assignments on time. (80% or higher) c. Exhibits neatness and order while working in the laboratory. (90% or higher) d. Care of tools and equipment while participating in functions of the lab. (99% or higher) e. Participation in activities throughout the semester. (80% or higher) f. Effectively manages time on assigned tasks. (85% or higher) 2) Evaluation of data per completed classroom and laboratory assignments, projects and hands on assessments reflected by course grading rubrics and the Inter-Industry Conference on Auto Collision Repair (I-CAR) National Automotive Technicians Education Foundation (NATEF) Task lists. 3) Student surveys.
3	Assessment Administration Plan (date(s), sample size or selection of course sections, scoring procedures, etc.)	<p>Assessments are ongoing each semester, to consecutively identify and enhance improvements for students and the program. Assessments are addressed to help replicate the rapidly technological developments of the industry. Continuation of laboratory tasks assessments as per Inter-Industry Conference on Auto Collision Repair (I-CAR) performance evaluations and National Automotive Technicians Education Foundation (NATEF) tasks lists.</p>

4	Assessment Results Summary (summarize Data)	<p>Classroom assignments and exams show that students continually need further practice on to tinting and color matching techniques procedures.</p> <p>Additional emphasis is needed on implementations of worksheets with logging tinting sequences and amounts. All be it gains were made in masking procedures there is still room for further improvement.</p> <p>Attention to detail on masking thoroughness and various styles of soft edging and back tapes will be in need of more practice.</p> <p>Student meticulousness needs improving in detailing.</p> <p>Gains were good in professional behaviors and traits but punctuality and clean up are areas to bring awareness. Prep work also showed there could be further room for improvement especially on soft edges during priming. Detailing is a fundamental task and it was determined to broaden cleanup procedures on a freshly refinished vehicle as per industry standards.</p> <p>Additionally although better overall student meticulousness was stressed and overall improvements were noticed, increased technical skill in most areas could help to hone entry level candidates.</p> <p>SLO Assessment Tool from Student Survey.</p> <p>ATCH 177 Course SLO's survey (Sp2014)</p> <table><tr><th>out of 13</th><th>Very Well</th><th>Fairly Well</th><th>Somewhat</th><th>Slightly</th><th>Poor</th></tr><tr><td>SLO#1</td><td>11</td><td>2</td><td></td><td></td><td></td></tr><tr><td>SLO#2</td><td>8</td><td>4</td><td>1</td><td></td><td></td></tr><tr><td>SLO#3</td><td>10</td><td>2</td><td></td><td></td><td></td></tr><tr><td>SLO#4</td><td>9</td><td>4</td><td></td><td></td><td></td></tr><tr><td>SLO#5</td><td>7</td><td>3</td><td>2</td><td>1</td><td></td></tr><tr><td>SLO#6</td><td>8</td><td>5</td><td></td><td></td><td></td></tr><tr><td>SLO#7</td><td>9</td><td>2</td><td>1</td><td>1</td><td></td></tr><tr><td>SLO#8</td><td>12</td><td>1</td><td></td><td></td><td></td></tr><tr><td>SLO#9</td><td>10</td><td>2</td><td>1</td><td></td><td></td></tr></table>	out of 13	Very Well	Fairly Well	Somewhat	Slightly	Poor	SLO#1	11	2				SLO#2	8	4	1			SLO#3	10	2				SLO#4	9	4				SLO#5	7	3	2	1		SLO#6	8	5				SLO#7	9	2	1	1		SLO#8	12	1				SLO#9	10	2	1		
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5	Discussion of Assessment Procedure and Results, and Effectiveness of Previous Improvement Plans	<p>Assessments made from tasks in the lab, projects, surveys, and tests scores indicate students continue developing incremental skill attributes for the preparation of success for an entry level technician in the industry.</p> <p>Determinations made from advisory and other instructors concluded that the assessments made from tasks in the lab, projects, and tests scores are the best indication of knowledge and skill attainment. Continue with Industry tasks and use Performance evaluations for various lab exercises. Proficiency in time management for skill attributes is necessary for the preparation of success for an entry level technician in the industry. Having assessments in the beginning of the course showed a good target for gauging instruction depth concentrations.</p>																																																												
6	Recommended Changes & Plans for Implementation of Improvements	<p>From analysis of assessments, planned course improvement considerations:</p> <p>Again need more emphasis on implementation of worksheet with logging tinting sequences and amounts.</p> <p>Maintain with more color matching exercises with spray-outs and matching vehicles in the lot by starting with variance decks and stressing the significance of mixing accuracy.</p> <p>Less weight will be put on custom painting and more emphasis will be concentrating on production shop job tasks found in industry.</p>																																																												

		<p>Continue with color matching exercises and start with solid basic colors and advance into two and tree stage colors. Detail procedures stressed at the beginning of class on washing and then later on refinished vehicles. More group interaction to help bring attention to inspection procedures as per industry standards.</p> <p>Discussions determined that even though more emphasis was placed on color spray-outs and color matching techniques, more work needs to be spent on tinting practices for efficiency. Prep work and masking techniques also showed there could be further room for improvement especially on soft edges. Detailing is a fundamental task and it was determined to broaden cleanup procedures on a freshly refinished vehicle as per industry expiations.</p> <p>Additionally although better overall student meticulousness could further be improved in most technical skill areas. This shall be stressed, and new procedures may be implemented to help address these issues shall be implemented in the future.</p>
7	Description or evidence of dialog among course or program-level faculty about assessment plan and results	<p>Some ideas and strategies for enhanced student developments shall be discussed at advisory committee meetings. With this dialogue it was determined that soft skills were of utmost importance. Masking, prep and color theory was also high on the list of objectives. With continued dialogue with students, instructors and advisory the program will put effort to instill these traits with students.</p>

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