FALL 2014 Course SLO Assessment Report - 4-Column

El Camino College

El Camino: Course SLOs (IND) - Air Conditioning and Refrigeration

Course SLOs 1 and ctu.unitid = 744	Assessment Methods & Standard and Target for Success / Tasks	Results	Action & Follow-Up
ECC: ACR 20 - Solar Energy Applications-Photovoltaics and Solar Thermal - SLO #1 Parts of Solar Thermal Units - After reading the textbook and participating in class discussions, students will apply their knowledge of appropriate lab practices, concepts and theories by naming the parts of a Solar Thermal unit in correct sequence and know how a Solar Thermal unit converts solar energy into hot water. Naming the parts of a Photovoltaic (PV) unit in correct sequence and know how a PV unit converts solar energy into electrical energy. **Course SLO Assessment Cycle:** 2014-15 (Fall 2014) **Input Date:** 11/12/2013 **Course SLO Status:** Active	**Assessment Method Description:** Students assigned reading exercises and class room instruction on solar thermal system component identification and function. **Assessment Method:** Exam/Test/Quiz **Standard and Target for Success:** Student receive passing grade on solar thermal component identification and functions tests.	02/19/2015 - Students were given an assessment test which required each student to identify and describe the function of each component in a solar PV system. Each student was graded on there ability to correctly identify and assign component function. 83% of the students received a passing grade between 79% and 89% 15% received a grade of 90% or higher and 2% received an unsatisfactory grade below 70% **Standard Met? :** Yes **Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Faculty Assessment Leader:** Timothy Muckey **Reviewer's Comments:** This assignment provided students the opportunity to apply classroom learning to system analysis and logical thinking.	04/23/2016 - Continue to monitor test scores for student success and outcomes. **Action Category:** Teaching Strategies
ECC: ACR 20 - Solar Energy Applications-Photovoltaics and Solar Thermal - SLO #2 Solar Energy Application - Students completing this course will apply their knowledge to the proper application of solar energy and solar thermal systems. **Course SLO Assessment Cycle:** 2014-15 (Fall 2014) **Input Date:** 11/12/2013 **Course SLO Status:** Active	**Assessment Method Description:** Students assigned reading assignments on solar thermal and power system applications which are supported with classroom instruction. **Assessment Method:** Exam/Test/Quiz **Standard and Target for Success:** Passing grade on solar thermal and electric system tests.	02/19/2015 - Students were given a test which required them to assess the value of different solar thermal and dialectical applications. Students formed teams. Each team was assigned specific solar thermal or electrical applications. Each member of each team was assigned by the team a specific component of the application to present to the class. Each team presented both a paper an oral presentation on there projects. All students evaluated received a 90% or better grade for there team presentation and paper. **Standard Met? :** Yes **Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Faculty Assessment Leader:** Timothy Muckey **Reviewer's Comments:** This project develops student leadership and team building skills	04/23/2016 - Continue to monitor test scores for student success and outcomes. **Action Category:** Teaching Strategies
ECC: ACR 20 - Solar Energy Applications-Photovoltaics and Solar Thermal - SLO #3 Solar System Operation & Installation - After completing this course student will gain the basic skills necessary to evaluate solar systems	**Assessment Method Description:** Wright a two page paper on solar system operation and installation requirements. **Assessment Method:** Essay/Written Assignment	02/19/2015 - Each student was assigned the task of performing and energy audit of a solar system operation and installation. Each student developed a 2 page report itemizing the system analysis. The students were required to complete a cost benefit analysis and provide	04/23/2016 - Continue to monitor test scores for student success and outcomes.

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operation and installation requirements. **Course SLO Assessment Cycle:** 2014-15 (Fall 2014) **Input Date:** 11/12/2013 **Course SLO Status:** Active	**Standard and Target for Success:** Passing grade on written assignment.	system comments and recommendations 25% of the students received a grade of 80 to 89%. 74% of the received a grade of 90% or better. !% of the students received less than a passing grade of 70%. **Standard Met? :** Yes **Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Faculty Assessment Leader:** Timothy Muckey **Reviewer's Comments:** This evaluation helped establish student system assessment skills	**Action Category:** Teaching Strategies
ECC: ACR 21 - Air Conditioning Fundamentals - SLO #1 Window Air Conditioning Manifold Gauges - After reading the textbook and participating in class discussions, students will apply their knowledge of appropriate lab practices, concepts and theories placing refrigeration manifold gauges on a air conditioning system and check for correct charge of an operating system based on manufactures specification. **Course SLO Assessment Cycle:** 2014-15 (Fall 2014) **Input Date:** 11/12/2013 **Course SLO Status:** Active	**Assessment Method Description:** Attaching refrigeration manifold gauge set and analyze system performance based on manifold readings. **Assessment Method:** Laboratory Project/Report **Standard and Target for Success:** Correctly determining system performance using manufactures performance guidlines	02/19/2015 - Students were assigned in a rooftop packaged unit. Students were assigned the task of evaluating system charge through performance analysis. Each student recorded unit data and determined based on that data system condition and service requirements. Each student turned in a log that was graded based on student final evaluations and accuracy of log. 89% of the students received a grade of 85% or greater and 10% received a grade of 70% to 84% and 1% received an incomplete. **Standard Met? :** Yes **Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Faculty Assessment Leader:** Timothy Muckey **Reviewer's Comments:** This assessment allowed students to apply classroom knowledge to hands on learning.	04/23/2016 - Continue to monitor test scores for student success and outcomes **Action Category:** Teaching Strategies
ECC: ACR 21 - Air Conditioning Fundamentals - SLO #2 Component Brazing - After completion of this course, students will acquire the skills necessary to successfully braze refrigeration components to meet basic industry standards. **Course SLO Assessment Cycle:** 2014-15 (Fall 2014) **Input Date:** 11/12/2013 **Course SLO Status:** Active	**Assessment Method Description:** Students are assigned a pipe project which requires students to employ the use of several tools to create a instructor specified pipe design. Students are then required to braze the project together and leak test the pipe project. **Assessment Method:** Laboratory Project/Report **Standard and Target for Success:** Students will leak test the pipe project to ~ 150 psig and test for leaks. Successful project will hold applied pressure for at least 15 minuets.	02/19/2015 - Students were assigned the task of constructing a project which required the use of a tubing bender flaring and swaging tool to construct a leak free piping project. Each of the students pressurized and leak tested there projects 80% of the students passed the leak-test the first time and the remaining 20% additional attempts to complete the project. **Standard Met? :** Yes **Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Faculty Assessment Leader:** Timothy Muckey **Reviewer's Comments:** This project takes classroom learning and adds	04/23/2016 - Continue to monitor test scores for student success and outcomes. **Action Category:** Teaching Strategies

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		practical experience.	
ECC: ACR 21 - Air Conditioning Fundamentals - SLO #3 Basic HVACR Service - After completion of this course, students will have the knowledge necessary to perform basic HVACR service in a safe manner. **Course SLO Assessment Cycle:** 2014-15 (Fall 2014) **Input Date:** 11/12/2013 **Course SLO Status:** Active	**Assessment Method Description:** Students will log system operating conditions and analyze system operation **Assessment Method:** Laboratory Project/Report **Standard and Target for Success:** Students will safely align required data with manufactures specification using the appropriate tools and personal protective equipment.	02/19/2015 - Students are assigned the task of completing a service log on a packaged AC unit. Each student must perform a refrigeration and electrical evaluation of the unit. Students are graded on there successfully on completing all of the test measurements. 5% of the students were successful on there first attempt while the remaining 95% required several attempts to complete the required tasks. In the end each student was successful in completing assigned tasks. **Standard Met? :** Yes **Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Faculty Assessment Leader:** Timothy Muckey **Reviewer's Comments:** This assessment takes several lab's to complete successfully for most students due to time and skill development requirements.	04/23/2016 - Continue to monitor test scores for student success and outcomes. **Action Category:** Teaching Strategies