Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Air Conditioning and Refrigeration

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #3 Pressure Testing and Charging Systems - Upon completion of a course of study, students in air conditioning and refrigeration will be able to properly pressure test, evacuate, and charge ACR system. **PLO Status:** Active **PLO Assessment Cycle:** 2013-14 (Fall 2013), 2017-18 (Fall 2017) **Input Date:** 07/01/2013	**Presentation/Skill Demonstration -** Students will apply knowledge gained in the classroom to practical experience in the lab. Students are required to complete a sequence of tasks on an assortment of instructor assigned equipment to demonstrate proficiency in pressure test, evacuation, and changing of ACR system. The instructor will guide the student through the processes and procedures involved in the tasks and validate student efficiency through successful practical application. **Standard and Rubric:** Student success is based on instructor skill assessment and student task completion based on instructor provided rubric for the particular task or tasks. **Additional Comments:** The students advance through a series of classes on a cross section of equipment to validate their individual skills on pressure test, evacuation, and charging ACR systems. Each instructor will develop his or her own matrix for evaluating student success however the end result is	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met Students were assigned a specific piece of equipment and given a checklist that required the completion of a series of task in a specific order. The tasks in this assignment included the pressure test, evacuation and proper charging of and ACR system. All students completing the exercise received a passing grade on the task by the end of the course. (03/16/2018) **Faculty Assessment Leader:** Phyllis Barthel **Faculty Contributing to Assessment:** Phyllis Barthel **Courses Associated with PLO Assessment:** ACR 21, ACR 25, ACR 23 **Semester of Current Assessment:** 2013-14 (Fall 2013) **Standard Met:** Standard Met Students were assigned a specific piece of equipment and given a checklist that required the completion of a series of task in a specific order. The series of task took several lab days to complete and after completion each student would repeat the exercise on a different piece of HVACR equipment with the addition of new related tasks. The tasks in this assignment included the pressure test, evacuation and proper charging of and ACR system. Students were graded not on individual tasks or on individual labs. Each student was judged proficient based on end of course practical review by the instructor. Each of the students completing the exercise received a passing grade on the task by the end of the course. (02/20/2014) **Faculty Assessment Leader:** Timothy Muckey	**Action:** Review of equipment utilized in the field during courses that aren't necessarily focused on working on that specific equipment would help with overall retention. (03/19/2019) **Action Category:** Teaching Strategies

PLOs	Assessment Method Description	Results	Actions
	compliance with state and federal regulations with respect to the skill sets.	**Courses Associated with PLO Assessment:** ACR23	
PLO #4 Attaining Certificates, Degrees, Transferring and Attaining Jobs - Students completing a course of study in air conditioning and refrigeration will successfully earn a certificate/graduate/transfer to 4 year universities and will successfully compete for jobs in which they can apply their knowledge and communicative skills acquired in the air conditioning and refrigeration program. **PLO Status:** Active **PLO Assessment Cycle:** 2013-14 (Fall 2013), 2017-18 (Fall 2017) **Input Date:** 07/01/2013	**Performance -** The (HVACR) Heating, Ventilation, Air-Conditioning, and Refrigeration program provides students several options to secure a living wage and job security. Students have several certificate options that will provide them the skill necessary in the job market. The more certificates a student acquires the greater the potential for student success in the marketplace. The addition of a degree to a student's resume provides additional qualifications to distinguish our graduates. Assessments are based on certificates and degrees acquired by HVACR students. **Standard and Rubric:** Certificates and degrees. **Additional Comments:** We are adding additional certificates to the program to keep pace with industry demands.	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met We recently added six new certificates of accomplishment to the ACR program. Of the six certificates 5 have been approved and will be available for students in the fall of 2018. The more certificates a student acquires the greater the potential for student success in the marketplace. The addition of a degree to a student's resume provides additional qualifications to distinguish our graduates. Assessments are based on certificates and degrees acquired by HVACR students. (03/16/2018) **Faculty Assessment Leader:** Phyllis Barthel **Courses Associated with PLO Assessment:** ACR 5, ACR6, ACR 21, ACR 23, and ACR 27 **Semester of Current Assessment:** 2013-14 (Fall 2013) **Standard Met:** Standard Met The HVACR program student generally comes to the program with the goal of refining a skill or acquiring the skill set necessary to earn a living wage. Certificates and degrees are a reflection to potential employers on candidate qualification. Students in the ACR5 class must complete a series of tasks both practical and academic to validate their understanding of electrical systems before they are allowed to continue on their path to the certificate or degree. ACR5 is a required class form both the degree and many of the certificates associated with the program. Six of the students in the ACR 5 course received a grade of A. The remainder of those completing the course received a passing grade enabling them to continue on their drive to a certificate and or degree. (02/20/2014) **Faculty Assessment Leader:** Timothy Muckey **Courses Associated with PLO Assessment:** ACR5	**Action:** Encourage students to meet with counselors and file an Intent to Graduate in a timely fashion. Additionally, increase marketing and student awareness of the new certificate options available, and the degree to which that improves their marketability. (03/23/2019) **Action Category:** Program/College Support

Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Architecture

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #2 Design Drawings - Upon completion of the Architecture Program, a student will be able to create conceptual diagrams that illustrate the main idea in the solution of the design problem given to the student. **PLO Status:** Active **PLO Assessment Cycle:** 2017-18 (Fall 2017) **Input Date:** 11/29/2013	**Project -** The student will develop drawings, sketches and models that illustrate and define conceptual diagraming development. **Standard and Rubric:** Minimum grade of C for 85%-90%	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met Students will develop portfolio of projects for evaluation. 85% the students were able to create diagrams properly illustrating the main idea for the design problem given. (03/02/2018) **Faculty Assessment Leader:** Dan Richardson **Faculty Contributing to Assessment:** Greg George	**Action:** With the creation of a sequenced and blocked schedule, the techniques will be taught in a in improved delivery system. (03/02/2018) **Action Category:** Curriculum Changes

Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Auto Collision Repair and Painting

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #2 I-CAR Welds - Upon completion of this discipline's course of study, the student will be able pass the official I-CAR MIG welding qualification test or ECC imitation. Welds include butt weld, lap weld and plug weld in flat and vertical positions. **PLO Status:** Active **PLO Assessment Cycle:** 2014-15 (Fall 2014), 2017-18 (Fall 2017), 2021-22 (Fall 2021) **Input Date:** 10/04/2013	**Presentation/Skill Demonstration -** Students attempting the ACRP imitation test will work with 3" x 1.25" 18-gauge mild steel plates. Plug weld holes will be at least 5 mm in diameter. Students will have at least 3 class days to practice setting up and using the MIG welders to weld practice pieces of the same description. On test day, students will be given only enough pieces to complete the 6 welds. Testing environment consists of the welder, locking pliers, wire cutters, vise and/or fire bricks, welding screens and auto-darkening welding helmet. **Standard and Rubric:** The target for student success in this PLO is 85% of students passing or almost passing I-CAR standards for each weld in an imitation test. I-CAR allows defects no larger than 3 mm and are pass/fail. ACRP welding tests will also use a 3 mm maximum and have three levels: pass, almost pass, and fail. 'Almost pass' is defined as passing all dimensional requirements except one.	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Not Met 22 students were enrolled at the beginning of the class assessed, 16 participated in the first test, 11 participated in the 2nd test. This class included a mix of students with 2-4+ semesters of experience in collision repair classes. FIRST TEST: Flat Position Butt weld: 3 pass (19%), 4 almost pass (25%), 9 no pass (56%) Lap weld: 5 pass (31%), 6 almost pass (38%), 3 no pass (19%), 2 did not turn in this weld (12%) Plug weld: 8 pass (50%), 4 almost pass (25%), 3 no pass (19%), 1 did not turn in this weld (6%) Vertical Position Butt weld: 3 pass (19%), 6 almost pass (38%), 4 no pass (25%), 3 did not turn in this weld (19%) Lap weld: 5 pass (31%), 6 almost pass (38%), 5 no pass (31%) Plug weld: 11 pass (69%), 3 almost pass (19%), 1 no pass (6%) Totals, 1st test: 35 pass (37%), 29 almost pass (30%), 26 no pass (27%), 6 no weld (6%) Success (pass and almost pass): 67%	**Action:** Purchase more MIG welders and spend more time one-on-one with students to work on travel angle, speed, direction and welder settings. Add a destructive test to boost excitement and bring more motivation to the activity via friendly competition among students. (09/04/2020) **Action Category:** Teaching Strategies **Action:** Expand this PLO to include horizontal and overhead welds to better mimic the I-CAR welding certification exam. Work with I-CAR to offer real student certification in steel MIG welding. (10/01/2018) **Action Category:** Program/College Support **Action:** Purchase more MIG welders and build collapsible welding stations with weld positioners so the students can focus on their welds instead of being distracted by rickety and imprecise hold-downs. Partner

PLOs	Assessment Method Description	Results	Actions
	I-CAR dimensions for butt and lap welds are: Length: 25-38 mm Width: 5-10 mm Face height maximum: 3 mm Melt-through width: 0-5 mm Melt-through height: 0-1.5 mm I-CAR dimensions for plug welds are: Diameter: 10-13 mm Melt-through diameter: 0-10 mm Face height maximum: 3 mm Melt-through height: 0-1.5 mm	SECOND TEST: Flat Position Butt weld: 2 pass (18%), 7 almost pass (64%), 2 no pass (18%) Lap weld: 5 pass (45.5%), 1 almost pass (9%), 5 no pass (45.5%) Plug weld: 2 pass (18%), 7 almost pass (64%), 2 no pass (18%) Vertical Position Butt weld: 3 pass (27%), 5 almost pass (46%), 3 no pass (27%) Lap weld: 3 pass (27%), 6 almost pass (55%), 2 no pass (18%) Plug weld: 2 pass (18%), 8 almost pass (73%), 1 no pass (9%) Totals, 2nd test: 17 pass (26%), 34 almost pass (52%), 15 no pass (23%) Success (pass and almost pass): 78% The first test was given after 2 weeks of practice and instruction on MIG welding, I-CAR specs, MIG machine setup and analyzing problems and errors by examining welds created. There were only 5 welders available for the class to use and some of the students encountered pushback from the toolroom attendant when they asked for more practice coupons (metal blanks). The overall student attitude was positive and ready to take on this challenge. The second test was given near the end of the semester when multiple steel welding projects had long since been completed. Perhaps too long since. The students seemed forgetful, out of practice and no longer interested in proving their skills or redeeming what they felt were disappointing scores from the first test. Only 4 welders were operational for this test. The students did show some overall improvement however, and many students made more consistent welds, going from wildly scattered results to mostly 'almost pass' scores. When adding the pass and	with WELDING department for this. (10/01/2018) **Action Category:** Program/College Support

PLOs	Assessment Method Description	Results	Actions
		almost pass scores, the percentage of 'success' increased from 67% to 78% from first to second test. Improvement: Weld for weld, 26 welds showed improvement (29%) and 64 did not (which includes a 'no' for the four students that welded in test 1 but did not participate in test 2). This does not meet the 85% improvement target for success. (12/24/2017) **Faculty Assessment Leader:** patricia fairchild **Courses Associated with PLO Assessment:** ACRP 1B	
		Semester of Current Assessment: 2014-15 (Fall 2014) **Standard Met:** Standard Not Met Students from ACRP 1B were chosen to provide data for this assessment. These students have completed at least one previous collision repair class but may have 3 or more semesters of collision repair experience. This six-welds test was given once at the beginning of the semester and once at the end. The data in this assessment reflects the end-of-semester data. For before and after data and comparison commentary, see ACRP 1B SLO #2 assessment, Fall 2014. Even though the data doesn't show it, students reported discomfort with the vertical positioning, most likely because they learned flat position first and had more practice with it. Most students reported they felt like they 'got' plug welding but said they still struggled with the steady hand and ability to follow a line necessary for butt and lap welding. Many of the butt and lap welds turned in that did not pass were much too narrow (travel speed too fast) and lacked good penetration. Students seemed scared to burn a hole and overcompensated by moving the torch too fast or did not hold the torch close enough to the metal. Data results for each weld according to student experience: BUTT WELD - FLAT (pass - almost - no pass) 87.5% pass/almost pass (21/24) Target met 0-16 units: 4 - 5 - 2 17-24 units: 4 - 3 - 0	

PLOs	Assessment Method Description	Results	Actions
		25-32+ units: 3 - 2 - 1 BUTT WELD - VERTICAL 91.3% pass/almost pass (21/23) Target met 0-16 units: 4 - 5 - 2 17-24 units: 4 - 2 - 1 25-32+ units: 4 - 2 - 0 LAP WELD - FLAT 83.3% pass/almost pass (20/24) 0-16 units: 3 - 6 - 2 17-24 units: 1 - 6 - 0 25-32+ units: 3 - 1- 2 LAP WELD - VERTICAL 69.6% pass/almost pass (16/23) 0-16 units: 3 - 5 - 3 17-24 units: 3 - 2 - 2 25-32+ units: 2 - 1 - 2 PLUG WELD - FLAT 91.7% pass/almost pass (22/24) Target met 0-16 units: 5 - 4 - 2 17-24 units: 3 - 4 - 0 25-32+ units: 3 - 3 - 0 PLUG WELD - VERTICAL 91.7% pass/almost pass (22/24) Target met 0-16 units: 6 - 4 - 1 17-24 units: 3 - 4 - 0 25-32+ units: 2 - 3 - 0 Most students passed or almost passed, though the level of experience did not matter as much as expected. This could be due to some students getting more or less practice depending on their personal lab projects, or it could be due to their interest in welding as opposed to painting or bodywork. Some students I expected to do well may have been intimidated by the no-practice testing environment that allowed only one chance at each weld. Conversely, a few students who were not as motivated or successful as others in their other coursework, including welding, did	

PLOs	Assessment Method Description	Results	Actions
		very well with this test. More data is needed for comparisons and recommendations. (09/04/2014) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild **Courses Associated with PLO Assessment:** ACRP 1B	

Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Computer Aided Design/Drafting

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #2 Creating and Interpreting 3D CADD Models - Upon completion of the Computer Aided/Design Drafting program, the student will be able to utilize CADD software to create 3D CADD models of detail parts and assemblies of various manufactured products and their components at an industry entry skill level. **PLO Status:** Active **PLO Assessment Cycle:** 2017-18 (Fall 2017) **Input Date:** 10/04/2013	**Performance -** Student performance on the Midterm and Final Exams were assessed as were the student design portfolios. (Active) **Standard and Rubric:** It is expected that the grade of 100% of students will average 80% of the maximum allowed point totals for completeness and accuracy.	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met Student (2nd Year) performance on design projects utilizing CADD software. (29 students) Individual Design Projects: Grade Range: 9 A 11 B 7 C 2 D 0 F Average score = 85 Detail Design packages Grade Range: 14 A 11 B 3 C 0 D 1 F Average score = 88	**Action:** Ensure that students are working on the latest version of CADD software, so that the skills learned are in line with current industry technology. (02/22/2019) **Action Category:** Teaching Strategies

PLOs	Assessment Method Description	Results	Actions

(02/22/2018)
Faculty Assessment Leader: Douglas Glenn

Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Construction Technology

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #3 Project Layout and Construction - Upon successful completion of the Construction Technology program, students will be able to participate in the layout and construction of a residential structure. **PLO Status:** Active **PLO Assessment Cycle:** 2017-18 (Fall 2017), 2021-22 (Fall 2021) **Input Date:** 11/29/2013	**Laboratory Project/Report -** Students will use information given to them to plan, layout, and construct different aspects of a residence with a 75% success rate.	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met 75% of students in the Construction Technology program were able to use a set of plans to layout and create a scaled project. (12/05/2017) **Faculty Assessment Leader:** Ross Durand **Faculty Contributing to Assessment:** Jack Selph, Maximino Pena, Eddie Pasache	**Action:** A cover and lights in the exterior laboratory would give students more time and add a level of accessibility for students which would increase their success levels. (02/19/2020) **Action Category:** Program/College Support

Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Electronics and Computer Hardware Technology

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #1 Safely Operating Industry Equipment - Upon successful completion of this program, students will be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. **PLO Status:** Active **PLO Assessment Cycle:** 2013-14 (Fall 2013), 2017-18 (Fall 2017) **Input Date:** 10/04/2013	Statistics Research Study **Standard and Rubric:** See related document ECHT PLO.1 Assessment **Related Documents:** ECHT PLO#1.doc	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met N= 58 Mastery Level 3 (earning 100-90 % possible points) Clearly identifies and is fully be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of "12' most common hand tools used throughout the program, on a daily 55 students 94.8% Partial Mastery 2 (earning 89-70 % possible points Somewhat partially be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of "12' most common hand tools used throughout the program, on a daily basis 3 students 5 % Non Mastery 1 (earning 69-0 % possible points) Cannot identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of "12' most common hand tools used throughout the program, on a daily basis 0 students 0 % (09/06/2017) **Faculty Assessment Leader:** Steve Cocca **Courses Associated with PLO Assessment:** ECHT 11,22 110,130,120,140, and 142	**Action:** Expand the use of hand tool use throughout the program Move to a more Project Based Curriculum (10/11/2017) **Action Category:** Teaching Strategies

PLOs	Assessment Method Description	Results	Actions
		Related Documents: ECHT PLO#1.doc	
		Semester of Current Assessment: 2013-14 (Fall 2013) **Standard Met:** Standard Met See related document ECHT PLO.1 Assessment (04/01/2014) **Faculty Assessment Leader:** Steve Cocca **Courses Associated with PLO Assessment:** ECHT 11, 110, 120 **Related Documents:** ECHT PLO.1 assessment - 13 fall.doc	
	Exam/Test/Quiz - Upon successful completion of this program, students will be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of “12’ most common hand tools used throughout the program, on a daily basis. **Standard and Rubric:** "3" Student achieved Full Mastery, 100-90% Students will fully be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of “12’ most common hand tools used throughout the program, on a daily basis "2" Student achieved Partial Mastery, 89-70%Students will partially be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met N= 58 students Mastery Level 3 (earning 100-90 % possible points) Clearly identifies and is fully be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of “12’ most common hand tools used throughout the program, on a daily basis 55 students 94.8% Partial Mastery 2 (earning 89-70 % possible points Somewhat partially be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of “12’ most common hand tools used throughout the program, on a daily basis 3 students 5 % Non Mastery 1 (earning 69-0 % possible points) Cannot identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of “12’ most common hand tools used throughout the program, on a daily basis 0 students 0 % (09/06/2017)	**Action:** Expand the use of hand tool use throughout the program Move to a more Project Based Curriculum (05/06/2019) **Action Category:** Teaching Strategies

PLOs	Assessment Method Description	Results	Actions
	“12’ most common hand tools used throughout the program, on a daily basis "1"Student achieved Non Mastery, 69-0% Students will not be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment. The student will identify both the name and use of “12’ most common hand tools used throughout the program, on a daily basis **Related Documents:** ECHT PLO#1.doc	**Faculty Assessment Leader:** Steve Cocca **Courses Associated with PLO Assessment:** ECHT 11,22 110,130,120,140, and 142 **Related Documents:** ECHT PLO#1.doc	

Assessment: Assessment Unit Four Column

Fall 2017

El Camino: PLOs (IND) - Welding

PLOs	*Assessment Method Description*	*Results*	*Actions*
PLO #3 Attaining Certificates, Degrees, Transferring and Attaining Job - Upon completion of the Welding program, students will successfully earn a certificate/graduate/transfer to 4 year universities and will successfully compete for jobs in which they can apply their knowledge and communicative skills acquired in welding program. **PLO Status:** Active **PLO Assessment Cycle:** 2017-18 (Fall 2017), 2021-22 (Fall 2021) **Input Date:** 11/29/2013	**Case Study -** Conduct a case study of combined data provided by IRP, the program review data sheet and anecdotal evidence of student employment from student interviews and communications. **Standard and Rubric:** 65% of welding students who complete at least 15 units in the welding program will earn degrees/certificates or find gainful employment in welding or welding related fields.l **Related Documents:** DegreeCertificateECC2017.pdf SuccRetention_SU17_Div.pdf	**Semester of Current Assessment:** 2017-18 (Fall 2017) **Standard Met:** Standard Met Through the case study conducted, the Welding program has shown a 60% increase in both degrees and certificates awarded from 2015 to 2017. According to IRP, two additional students have transferred from the Welding program to CSUDH to pursue four year degrees during the same time frame. We are seeing a much higher success rate in students taking knowledge learned in the welding program and attaining gainful employment. Since 2015, approximately 70% of the students surveyed who completed more than 15 units in the Welding program have reported back as successfully finding employment in the welding or welding related fields. The welding department is in the early process of compiling an ongoing data base to track student employment success as there is no current method through IRP to adequately track this data. With the currently robust state of the construction and Aerospace economy and lack of skilled trades people, El Camino welding students are finding employment in lucrative careers with Local 433 (Iron Workers), Local 250 (Pipefitters and Steamfitters), Los Angeles Department of Water and Power, Los Angeles County Public Works, LAUSD, TTX Railroad, Honeywell, Ace Clearwater, SpaceX, Growth Point Industries and Art Metal Inc. (03/02/2018) **Faculty Assessment Leader:** Dylan Meek **Faculty Contributing to Assessment:** Renee Newell **Courses Associated with PLO Assessment:** Weld 10A, Weld 10B, Weld 10C, Weld 23, Weld 15, Weld 28, Weld 29, Weld	**Action:** Implement an active wire fed program to further improve our student's chances to find employment in the structural steel construction industry. We are running Weld 20A for the first time in Fall 2018. (03/02/2019) **Action Category:** Curriculum Changes

PLOs	Assessment Method Description	Results	Actions
		45, Weld 40A, Weld 40B, Weld 40C,	