Automotive Collision Repair & Painting
Program Review – 2015

1. Overview of the Program

A. **Program Description.** The Automotive Collision Repair and Painting (ACRP) program prepares students for employment in the field and provides employment upgrade opportunities for currently employed technicians. By completing the degree requirements, students will gain proficiency in industry repair standards, vehicle construction and parts identification, damage estimating, frame repair, automotive welding, body repair and panel alignment, and vehicle refinishing. Completing the ACRP certificate requirements prepares students for employment in the fields of automotive insurance investigation, vehicle accident reconstruction, automotive collision repair or automotive refinishing.

Department Highlights:

- Limited supply, large demand: ACRP is one of only five remaining Southern California community colleges to offer auto collision repair classes. Over 200 collision repair shops exist within a 10-mile radius of ECC.
- ACRP has increased the number of classes in its rotation by over 240% since 2009.
- ACRP had an average course fill rate of 102.13% between fall 2010 and summer 2014.
- In the six semesters between fall 2011 and spring 2014, ACRP success and retention rates have exceeded state average four times.
- ACRP success and retention rates were the second highest in the division for spring 2014. The Division ranked first in the school the same semester.

ACRP 'Big Goals' for the near future:

- Industry Partnerships, Reputation Building and Student Job Placement
  - Establish internship and two-way mentorship programs
  - Create 'fast track' stackable Certificates of Achievement
  - Create annual multi-campus student car show/industry job fair/media event
- Industry Certifications for Students
  - Incorporate vital Inter-Industry Conference on Auto Collision Repair (I-CAR) Platinum curriculum and student certification

- Complete elite National Automotive Technicians Education Foundation (NATEF) certification for ACRP
- Offer low-cost Automotive Service Excellence (ASE) student testing program and technician test study sessions

- Continued Expansion of Course Offerings and Community Outreach
  - Expand curriculum to include damage estimating and employability soft skills, as requested by students and advisory committee members
  - Hold vendor demo days and one-day industry certification classes for students and existing local technicians
  - Attract new and non-traditional students via Saturday, Friday, afternoon and Community Education classes
  - Actively target women and existing technicians seeking skills upgrades
  - Partner with Business, Manufacturing, Welding and Auto Technology departments to expose students to tangent and blended careers in automotive

B. **Degrees/Certificates.** The ACRP program offers one A.S. Degree (60 total units including 20 units of collision repair and 40 units of general education), two Certificates of Achievement (32-40 units of collision repair) and two Certificates of Accomplishment (6 units of insurance investigation or 6 units of accident reconstruction).

ACRP is already working to add a 6-unit Certificate of Accomplishment to highlight its updated damage estimating classes and to restructure its Certificates of Achievement into five stackable 'fast track' certificates that follow industry job descriptions and Automotive Service Excellence (ASE) testing categories.

C. **College Mission.** Student and alumni feedback have proven ACRP successfully contributes to the College's mission of making a positive difference in people's lives. The following are a few success stories of students who would not be on their current path without ECC and the Collision Repair program:

Eric L. – A humble and incredibly talented artist and auto painter, Eric was accepted into the Honda Research & Development semester internship program (pictured second from right) and is now a long-term intern at the BASF training center in Buena Park. He is an El Camino ACRP graduate and has been accepted into the prestigious Art Center School of Design's transportation design program. He is currently seeking – and finding – work as an automotive color designer earning $25 per hour.

Classmate and co-intern **Rudy F.** (far right, Honda group photo) significantly modified the body of his Honda Civic in class while earning his Certificate at ECC. The car was recently featured in a local Honda show's event coverage video.

Jose V. – A charismatic and driven guy, Jose painted anything and everything that rolled through the ACRP lab yard gates. After graduation, he found work as a detailer and within six months was managing teams of detailers at multiple locations.

Kathy C. – An unconventional student with a lot of heart, Kathy has won multiple I-CAR Education Foundation scholarships, campus scholarships, and is an academic award winner. Pictured here with the spray guns, shop shirt and gloves she won through I-CAR and the car she repainted, Kathy has already started giving back by participating in the ECC Teacher Trac program, working as a work-study student ACRP lab assistant, and encouraging hesitant students to pick up a tool and make some noise! She has finished ACRP certificate requirements, and intends to earn a certificate in Auto Technology and complete her AS Degree as well.

Bella V. – Bella's attention to detail and exceptional work quality were responsible for her super-intern status at Honda Research and Development. Honda internships were only supposed to last for one semester, but they liked her work so much that they changed their own rules and kept her for the summer… and the fall semester after that.

Brian D. – A military veteran and retired engineer with a passion for Mustangs, Brian is a multiple show-car builder and painter who has won people's choice and first place trophies at Southern California all-Ford and all-Mustang shows that attract *thousands* of entrants. He is also a 'heckuva guy' who always has time to help fellow students or share a tool or technical fact. Brian was selected to be one of Industry & Technology division's two Academic Achievement Award winners in 2015.

Diana A. – A bubbly and perpetually positive person, there is no limit to Diana's energy. Despite fibromyalgia pain, she sanded, repaired and repainted her whole car, and then went on to earn ECC Certificates in auto technology, crash analysis, and fraud investigation. While still in school, she was hired at a shop-in-trouble as a receptionist and promptly turned the whole place around with her

organizational skills and cycle time management ideas. She is pictured here with her co-workers including ACRP classmates **Sebastian M.** (far left) and **Zac M.** (far right). The professional uniforms were one of her ideas.

Jose M. – Jose is a street-smart guy with a turnaround story. Once an ambivalent student with a poor attendance record, Jose is now a motivated student and spring 2015 graduate. Jose's newfound passion and talent for painting won him selection to attend complimentary BASF painter certification training, as arranged through ACRP. He was then invited to intern with them after just one session. In April, Jose turned 21, finished custom painting his car, and was hired as an industrial painter to the tune of $17.50 per hour. It is his first job. He is over the moon with excitement about where his life is headed.

Strategic Initiatives. ACRP emphasizes hands-on learning and problem solving whenever possible, and incorporates lectures, book work, written essays, guest speakers and field trips into class activities as well. To foster student support, ACRP faculty have gone above and beyond their stated duties when it comes to arriving early, staying late and donating tools, supplies and materials, etc. to make sure students can make progress on their projects and succeed in their classes and career goals. Advisory Committee members and other corporate donors have generously donated thousands of dollars' worth of materials and supplies for student use.

ACRP is eager and willing to collaborate with other departments such as Auto Technology, Welding, Robotics, Machine Tool Technology, Business and Fine Art to expose students not only to collision repair and painting but the wide, wide variety of tangent careers available to people interested in all things automotive, from initial design to product prototyping and manufacturing to business management. ACRP plans to dedicate more time to seeking out and collaborating with local shop owners and technicians as well beginning in 2016. These partnerships will start to put in place ACRP's plans to integrate college courses with industry certification training and job placement as well as build a network of knowledgeable advisors.

Department outreach to high schools, youth programs, and women continues to excite and entice young people to enroll in ACRP classes and attract media attention from local cable channels and podcasts. While ACRP is driven by industry to look forward, ECC administration insists on its share of self-evaluation, and the department is eagerly anticipating a degree of automated integration between SLO assessment, program review, program planning and budgeting. The new TracDat software and fine tuning of SLO processes and scheduling is starting to come together into a single useful, unified system that will hopefully include the other facets of department planning such as budgeting, curriculum review and other deadlines in the near future. In the classroom and lab, new technology from a smart classroom to high-tech repair equipment keep ACRP training real and relevant to students seeking employment in the fast-paced and incredibly technical industry of collision repair and painting.

D. **Previous Recommendations.** Below is the list of recommendations from the 2011 program review report with comments on the current status of each.

1. **Achieve NATEF certification ($34,000 remaining need for required equipment)**
   The $34,000 was obtained via CTEA grant in 2012 and all remaining tools and equipment on the NATEF list were purchased. The department has been sidetracked in the certification process by new building planning and construction, moving, complete curriculum overhauls and new-system SLO compliance. ACRP intends to move forward with NATEF certification in 2016, which entails assembling a paid team of eight reviewers to tour the facility and inspect campus policies and curriculum for NATEF alignment.

2. **Obtain partnership with 'green' waterbase paint system to comply with new laws ($15,000 or donation assistance)**
   Advisory Committee members Steve Corbin (NAPA) and Roger Godin (Finishmaster) have arranged donation of waterbase paint systems to ACRP (value: $10,000-$19,000 each) with the understanding that ECC will replenish empty paint colors to maintain the system. Special assignment instructor German Magana has also donated waterbase toners, primer and clearcoat to ACRP (approximate value: $15,000), but support chemicals like binder, balancer and hardener were not included and need to be purchased with department funds.

3. **Reactivate CWEE Work Experience class (ACRP 95abcd) and partner with local shops to provide students with real-world training (Approved for spring 2012)**
   Both ACRP 95abcd and ACRP 99abc (Independent Study) have been regularly offered the past few years. Most ACRP 95abcd students were interns at Honda Research and Development which allowed them to learn and use the latest computerized design, prototyping, modeling and vehicle building technology and equipment that Honda uses to create concept, show and production vehicles. Honda suspended the intern program indefinitely in 2014 while they remodel their facility.

4. **Continue to promote completion of, and application for, degrees and certificates**
   ACRP continues to improve its success and retention rates. ACRP percentages have now exceeded state average on a growing number of occasions, and both rates were second best in the Division for spring 2014. Students are still reluctant to graduate as soon as they are able because they either want to take more ACRP classes or they want to double major in Auto Technology, Welding or Business. Students are well aware that as soon as they receive a degree or certificate they will no longer receive financial aid without special permission and paperwork.

5. **Continue efforts to recruit women into department classes ($1200/yr, events and promotion)**
   Plan Builder funding requests for female recruiting have not been granted, despite significant positive feedback from recruiting event participants and strong

administrative and division support. Full-time instructor Pati Fairchild held multiple events for women including the monthly Girls in the Garage workshops (beginning in 2009) and the very well-received all-female car show in 2014. The Women in Technology (WIT) club reimbursed expenses such as snacks and workshop materials. Although the events are well-attended and get great reviews by the participants, very few if any ladies went on to enroll in regular ACRP classes. The Girls in the Garage program is currently on hold for reevaluation of its target market, marketing strategy, and for feasibility as a Community Education class.

6. **Reputation-building on campus and in the community (website, Facebook social media page, on-campus events, multi-college competition events, etc.)**

ACRP continues to participate in the Campus Career Fair and WIT recruiting events. A Facebook page exists with nearly 100 members, but the structure of the page should be reset as a Group, not a fan page, to encourage better communication rather than one-way information distribution.

Plans for an annual multi-campus student car show have been in the works since 2012. The show would serve as an industry job fair as well as a friendly competition between auto programs. The opportunities for industry partnerships, student job placement, donations and media attention from such an event are incredibly exciting. The show could become *the* automotive and collision repair technician recruiting event for Southern California and would be a natural draw for high school student recruiting into ACRP as well. A planning committee of 6-10 members with an event-day volunteer count of 40 or more would be ideal.

7. **Actively encourage students to attempt and pass ASE (Automotive Service Excellence) certification tests**

Free afternoon ASE study sessions were held in fall, 2014, guided by instructor Fairchild and attended by a handful students. To date, only one student is known to have attempted an official ASE test. The financial obstacle ($36 registration fee and $35-per-test fee) of taking the tests is prohibitive to students who already fear the pass-or-fail format and reputation for difficulty. Plan Builder requests have included plans for developing an ASE test fee reimbursement fund, but the requests have not yet been funded. An alternative that ACRP will pursue is the ASE Student Certification program that allows students to take modified tests at a total cost of $30 per year for two attempts at each test in their area of study, in this case, collision repair which consists of 4-5 tests. If successful, the program could easily be expanded to include testing for Auto Technology students. ASE Student Certification test results and performance analysis compared to student results data nationwide are provided to participating schools.

8. **Create an alumni tracking and employment support system for students**

Grant applications require alumni employment data, and ACRP has struggled to find a source of this data on campus. The department would like to create a job

placement/alumni tracking website that would allow students and alumni to connect, search for local jobs, post availability and qualifications for jobs, and create one easy-to-search place for local employers to find and hire well-trained technicians in a format connected with ECC that ACRP could monitor for research purposes. Such a system could set a precedent for the College and be expanded or duplicated for other departments and campuses as well. To date, Plan Builder requests for funds to reimburse instructor time to create an alumni tracking and job placement system such as this have not been granted, but Division administration has suggested and encouraged the hiring of a CalWORKS student to assist ACRP faculty with administrative and office duties for special projects. Planning and negotiation has begun.

9. **Reinstate the afternoon paint and estimating classes (2A, 2B, 2C, 3A)**

   9a. Hire a full-time instructor for afternoon classes ($82,000/yr)

   Full-time hiring requests in Plan Builder have been denied in recent years, and no further full-timer requests are planned. The paint classes (2A, 2B and 2C) have been incorporated into the morning advanced class rotation and have been very popular with students. ACRP 3A (Estimating) was inactivated in 2013 and is being rewritten, updated and expanded for Fall 2015 curriculum committee review.

   9b. Purchase estimating software and arrange class access to computers

   Licenses for both CCC One and Mitchell Estimating software were granted to ACRP by the I-CAR Education Foundation, but have not yet been installed in a computer lab. The CAT building does not have a computer lab, so the software will be installed in a library or ITEC lab for ACRP class use. Both software packages receive multiple free updates per year to make sure students continue to have the latest collision and technical repair information.

10. **Integrate I-CAR content and qualification tests into curriculum ($15,000 full access content)**

    Multiple requests to purchase I-CAR curriculum have gone unfunded in Plan Builder. ACRP has applied for the 2015 I-CAR Education Foundation's Ultimate Collision Education Makeover Grant which, in addition to the $50,000 grand prize, offers one-year subscriptions of I-CAR PDP-EE curriculum to interested schools. Winners will be announced in November, 2015. If ACRP is chosen to receive the curriculum, its instructors will have to attend training sessions to be able to extend to students the benefits of I-CAR curriculum: technician certifications called I-CAR Qualification Points, which are highly valued by employers.

2. Analysis of Research Data

A. **Head Count.** Each semester, in addition to one section of ACRP 95abcd (CWEE Work Experience) and occasionally ACRP 99abcd (Independent Study), ACRP holds about 6-7 classes: two in the morning, 3-4 in the evening, and one special assignment Friday class

in Spring for high school students. Enrollment totals about 110-130 students per semester. The morning classes fill quickly and usually have a waiting list within the first 3 weeks of registration. The evening class instructors have a loyal following and these classes also fill quickly.

B. **Grade Distribution.** Between Fall 2010 and Summer 2014, ACRP grade distribution averaged thus:

ACRP	A	B	C	D	F	I	Drop	W
Average	40.8	21.6	13.1	6.0	5.6	3.6	1.9	10.0

These numbers are consistent with ACRP success rates, and show most students perform very well in class. Those who do not succeed usually have attendance problems. The low drop rate and high withdraw rate reinforce what instructors see in classes: students are hesitant to sever ties and drop themselves, leaving instructors to drop or fail them. This hesitation could be due to feelings of failure when faced with the finality of dropping a class, a student's hope that he may pass despite his non-participation, a student's greed to receive financial aid for taking a class he does not attend, or other reasons. From instructor-student interaction, most ACRP students fall into the first two categories.

Please see Appendix A for a breakdown of data by course, instructor and semester. Many students choose a favorite instructor who teaches in a way they appreciate and follow that instructor throughout their time in ACRP. ACRP instructors therefore get to know their students very well and leverage this student tendency to informally track student degree and career progress and to encourage them one-on-one to complete their degree or certificate.

C. **Success Rates.** Data for ACRP success and retention rates compared with state average is shown below. Data highlighted in green shows semesters where ACRP rates exceeded state average.

Success and Completion Rates

Term	% Completion	State Average	% Success	State Average
Fall 2010	83.20	89.70	72.00	78.18
Spring 2011	83.50	90.06	65.20	79.11
Fall 2011	89.90	88.75	75.20	78.42
Spring 2012	81.10	89.67	69.80	78.73
Fall 2012	87.20	90.42	73.70	77.14
Spring 2013	92.00	91.20	77.90	77.61
Fall 2013	92.50	91.72	82.60	79.95
Spring 2014	95.80	91.74	84.90	80.48

Summer 2014	83.30	90.38	77.80	85.71
Fall 2014	n/a	90.08	n/a	78.57
Spring 2015	n/a	n/a	n/a	n/a
Five-Year Average	**87.61**	**90.37**	**75.46**	**79.39**

As the numbers show, ACRP continues to make progress toward higher success and retention rates. ACRP has bested the state average an increasing number of times lately and intends to continue the trend *without sacrificing academic rigor*. As mentioned in section 1D-4, ACRP rates were second best in the Division for spring, 2014. This is significant because the Division ranked highest in the school for success and retention the same semester.

D. **Retention Rates.** See above. It is believed that the increase in success and retention come from the students' awareness of and appreciation for the value and "coolness" of the department. They see the enthusiasm and competency of the instructors, they see the skills they learn and demonstrate on their cars win the approval of family and the envy of friends, and they see that approval lead directly to job offers and referrals. *In short, they see results.* ACRP's goal to build the reputation of the program has begun at a grass-roots level with the proud students and their four-wheeled resumes.

E. **Distance Education Classes.** ACRP does not offer Distance Education classes.

F. **Enrollment.** Enrollment consistently exceeds available seats in ACRP lab classes. Each spring and fall semester, from fall 2007 to spring 2014, the average total enrollment for the ACRP department has been 90-120% capacity. Only one section of each course is offered each semester. Advanced and previously repeatable classes are offered on a rotating basis.

All ACRP classes that include labs are very popular, and a larger percentage of ACRP students enrolled multiple times in repeatable classes than in other technical departments. When state rules regarding repeatability necessitated a curriculum rewrite in 2013, ACRP listened to student feedback and demands, and split each repeatable class into the maximum number of individual classes. The final stages of splitting the repeatable classes are just now being approved by the Curriculum Committee and released for 2016. Students who take the 20-series lecture-only classes speak highly of the instructor and the fascinating subject matter.

ACRP has recently reinstated the offering of summer classes. The hands-on class offered in summer 2014 had a low fill rate (69%) not because students didn't want to take a summer class but because the course offered was a non-repeatable class that had already been offered twice in the recent past and was offered in the morning when most students were working at summer jobs. Changes to toolroom attendant scheduling have allowed ACRP to offer summer classes in the evening, and the passage of new

classes through the Curriculum Committee has had a positive impact on class fill rates. Please see Appendix B for data breakdown.

G. **Course Scheduling.** The ACRP schedule is split between morning and evening classes that are held Monday through Thursday. The special assignment Youth Build class is held Fridays at midday to fit in with their high school scheduling format.

In the morning, the beginning course ACRP 1A and one rotating advanced class are always offered with a combined lab Monday through Thursday and alternating lecture days. These courses are 8 units and run from 7:00-11:00am for lab and 11:15am-12:40pm for lecture. Students love the 8 unit format and although they grumble at the early start time, they know it will prepare them for employers who expect them alert and on the job by 7:30 or 8:00am. The early start time also means an early end time, allowing students to work or take other classes in the afternoons and evenings. Student surveys consistently show strong support for keeping the 8-unit class format.

In the evening, ACRP used to offer the repeatable 4-unit classes 4abcd (a body repair class) and 5abcd (a paint class) from 5:30 to 10:30pm, two nights a week. Now the classes have so far been split up into non-repeatable 4A, 4B, 5A and 5B and use the same time and day schedule. The 4C, 4D, 5C and 5D classes are just now being approved by the Curriculum Committee for release in 2016, much to the relief and joy of the students who work during the daytime and need more ACRP units to graduate. The 20-series classes are also offered at night, from 6:00-9:30pm. ACRP used to offer these 3-unit classes once a week for the full 16 weeks, but has responded to student suggestions and now offers these classes twice a week for 8 weeks, one after the other in the semester. This allows students to receive a Certificate of Accomplishment after just one semester rather than one year.

ACRP would like to begin offering Saturday classes as well. This would solve the question of funding the Girls in the Garage workshops, satisfy the desire of current students to get more work time, and attract new students who cannot attend classes during the week due to jobs, family or other commitments. The classes could be held through Community Education, perfect for Girls in the Garage, or they could be a mix of beginning classes and an advanced 'boot camp' class for alumni and professionals seeking a promotion at their job to full-fledged technician. ACRP intends to create a campus auto club that would meet on Saturdays to test the interest in these ideas and commitment to a Saturday format.

H. **Improvement/Persistence Rates.** As mentioned in section 2B above, no formal data is collected, but instructors frequently get students who follow them through a rotation of classes over time and may be lucky enough to maintain contact with some of them even after graduation for employment tracking and placement opportunities. In general, students have no problem navigating the pathway to an ACRP Degree or Certificate because as they are written, only the total number of units matters, not which ACRP

classes are taken. As ACRP expands and aligns more closely with ASE and I-CAR, the Certificates will be rewritten to slim them down (20 units instead of 32) and split them up to channel a student more efficiently into the different career paths a collision repair technician can choose. ACRP refers to this as 'fast-tracking' and the rationale behind the switch is to get students well trained for specific entry level jobs, get them out into the industry as journeyman-level technicians, then encourage them to return for more advanced training and certification when they are ready to become full-fledged technicians. This plan has received loud praise from the Advisory Committee because it gets graduates into the industry faster, allows shops to participate in the shaping and training of their hires, and instills in technicians the importance of lifelong learning in a technical field. When finished, ACRP will offer one AS Degree and four Certificates: Painting and Refinishing, Non-Structural Repairs, Structural Repairs, and Mechanical Systems. These four categories match ASE's four collision repair test topics for Master Collision Technician status and the most common career paths/job levels for technicians.

I. **Additional Data.** Institutional Research data shows that between 2010 and 2013, women made up between 8.6 to 13.5% of the ACRP student body. This number peaked in 2011 and the 8.6% result came in 2013. This data falls far short of ACRP's goal of 33% female students in the 5-10 year future set in the 2011 Program Review. A more realistic goal for the now-near future would be 15-20%. ACRP instructor Pati Fairchild, hoping to leverage the fact that she is female herself, has tried to entice women to explore automotive classes through Girls in the Garage workshops, participation in Women in Technology and Women in Non-Traditional Employment Roles (WINTER) events, high school recruitment presentations, and assorted do-it-yourself 'ladies day' events; but despite rave reviews and a dedicated following, the women who participate do not enroll in regular classes. They are students pursuing other majors, or women with a hobbyist or owner-level interest in cars that are already employed in other careers with families to consider. Although outreach activities have been inspiring and beneficial for the community, ACRP must work harder to target women who have not yet chosen their career path.

The low percentage of women in ACRP classes is disappointing considering the average annual salary of a collision repair technician is $52,997 nationally compared to an average of $36,702/year for the top five most common jobs held by women in 2013 according to CNN and the Institute for Women's Policy Research. These jobs included first-ranked administrative assistant ($35,204) and second-ranked cashier ($19,708). The others in order are elementary/middle school teacher ($48,724), registered nurse ($56,472) and nurse's assistant ($23,400). ACRP's 8.6% female student population is not necessarily poor however: according to I-CAR's 2013 *Snapshot of the Collision Repair Industry*, women currently hold just 2% of nationwide hands-on collision repair technician jobs, and another source, Catalyst Inc., reports 1.5% women for collision repair and 1.8% for auto mechanics in 2013. Women in non-technician collision repair jobs total 22-25% of the workforce; about half of these are in administrative

assistant/receptionist positions, the other half are predominantly estimators, insurance adjusters and various levels of management.

J. **Recommendations.** ECC Counselor Valencia Rayford recommended in ACRP's 2015 advisory meeting that more ACRP classes should be offered during spring and fall as well as summer to meet student demand and, presumably, to prevent overcrowded labs.

3. Curriculum

A. **Six-Year Review Schedule.** As a CTE program, ACRP reviews its curriculum every two years. The two-year CTE review is supposed to be a light-duty review compared to the usual six-year review, but usually so much has changed in industry that a complete analysis and adjustment is in order at every review. Below is a table showing ACRP's proposed review schedule based on recent curriculum review dates:

ACRP Course	Last Reviewed	Next 6-Year Review	Next CTE Reviews
1A	2015	2021	2017, 2019
1B	2009	2015	2017, 2019
1C	2009	2015	2017, 2019
1D	2009	2015	2017, 2019
2A	2015	2021	2017, 2019
2B	2015	2021	2017, 2019
2C	2015	2021	2017, 2019
4A	2012	2018	2016, 2020
4B	2012	2018	2016, 2020
5A	2012	2018	2016, 2020
5B	2012	2018	2016, 2020
6 (Not offered at Torrance campus)	2013	2019	2015, 2017
20	2015	2021	2017, 2019
22	2015	2021	2017, 2019
24	2015	2021	2017, 2019
26	2015	2021	2017, 2019

B. **Course Additions.** ACRP has complied with non-repeatability rules by splitting repeatable classes like 4abcd and 5abcd into four non-repeatable classes each (4A, 4B, 4C, 4D and 5A, 5B, 5C, 5D). The A and B courses are being held in our evening class rotation and the C and D courses are in the final stages of approval in the Curriculum Committee. They will be ready to offer in 2016.

The painting classes ACRP 2A, 2B and 2C have been reinstated in our morning course rotation and the classes have been very popular with students.

C. **Course Deletions/Inactivations.** ACRP has inactivated 3A, a 3-unit collision damage estimating class that needs a complete rewrite to incorporate computer-based estimating and accommodations for new repair procedures. The plan is to rewrite the course as two 3-unit classes, one beginning class that will introduce students to the process, vocabulary and procedure of examining a damaged vehicle and writing an estimate, and the second, an advanced class that will teach students how to use estimating software and digital documentation, as well as explore the business end of estimating and shop management that makes clear just how make-or-break important writing a thorough estimate is to a collision repair facility.

ACRP has also removed from its rotation 6abcd, the 3-unit class usually held during summer session. The summer class had been cancelled for a few years during the recession, and when budget allowed ACRP to offer a summer class, the 4-series and 5-series classes were chosen because students had complained that a 3-unit class left them one unit short at graduation. Compton Center continues to offer 6abcd (now ACRP 6, due to non-repeatability). It will be rewritten as a two-unit class intended for non-majors to attract new students to the program.

D. **Distance Education.** ACRP does not offer Distance Education classes.

E. **Meeting Student Needs.**

1. Two-Year Course Cycle. Due to the large number of courses needed to properly train technicians in all aspects of modern collision repair and due to finite lab and faculty size, ACRP must run its courses in a rotating cycle rather than offering every course every semester. The evening lab classes (4- and 5-series) will run in a two-year cycle when the C and D classes are approved, the 20-series classes now run in a one-year cycle, and the advanced morning classes run in a 3-year cycle. The Curriculum Committee, during the C and D course review process, expressed concern that an entering student might start in a semester that offers the C class rather than an A-designated class. It was explained that ACRP courses are set up to cover certain whole topics and procedures more like English classes (one can study literature before composition or vise-versa) rather than sequential like math classes (one must take algebra before geometry before calculus). The answer satisfied the Committee and students have never expressed difficulty with the material from an underprepared standpoint – all classes assume the students are new to the topic.

2. Articulation. ACRP articulates its ACRP 1A Introduction to Collision Repair class with Compton Unified Regional Occupational Program's ROP Auto Body/Fender Repair class.

3. Certification/Licensure. Although practicing collision repair does not require a state license, two industry certifications are highly recommended: ASE and I-CAR. The ASE

Certification process involves taking a rigorous pass/fail multiple choice test, or taking a series of tests for Master Technician certification ($36 registration fee and $35 per test). ASE Certification is valid for five years. ASE Certification is almost imperative for auto mechanics, but a collision repair technician with this certification is also respected and valued among employers because of the difficulty of the tests – one cannot simply buy his way into certification, he must earn it. El Camino College can help students earn ASE Certification through a student testing program as mentioned in section 1D-7.

I-CAR Platinum certified status is currently more valuable to the hopeful collision repair jobseeker than ASE certification. Collision repair facilities that maintain a near 100% level of I-CAR Platinum-certified technicians receive I-CAR Gold Class shop status, which makes the shop very attractive to insurance companies and customers who value repair jobs completed on time to high standards. The I-CAR Platinum three-level certification process begins with the technician attending a series of eight to eleven $125 one-day lectures on topics related to their specific job duties and taking a short exit exam. A technician is then expected to maintain his I-CAR training by attending five to eleven more courses at similar cost in the following two years (levels) before switching to annual refresher courses. Completed courses are valid for only one year.

It is easy to see why employers would rather hire technicians who are already I-CAR Platinum certified than pay to send them to training, especially since certification remains with the technician, not the shop, when a technician quits or transfers. El Camino ACRP can purchase I-CAR training materials and assign Platinum certification to students through I-CAR's Professional Development Program (PDP-EE). ACRP has requested to participate in this program by including PDP-EE materials in its 2015 I-CAR Education Foundation grant request. Including I-CAR content in ACRP curriculum will be simple since this material is already being taught - it is simply the existing industry-correct safety and repair methods as branded by I-CAR.

F. **Related Recommendations.** The Advisory Committee has made multiple valuable recommendations for additions to ACRP curriculum. The first and most exciting is the suggestion to begin a 'technician trade-out' or bridge program that would train existing, aging technicians to transfer into management and business roles while mentoring young technicians to take their place in the shop. Cerritos College has begun offering collision repair business and management courses at its new Technical Training Center, but has not taken the next step of creating an integrated technician replacement program with partner shops. Advisory Committee member Roger Godin reports the local and national market is "huge" for this training and would like to help us initiate the shop-integrated courses. Industry data supports his view: according to I-CAR's 2013 *Snapshot of the Collision Repair Industry*, the largest age group of collision repair technicians is 41-45 at 15% of the national workforce of 173,200. Technicians 50 and older represent approximately 17% of the workforce, and the average technician age is 39 years

old. Initiating this program would take a large amount of planning and organization, but surprisingly little in the way of facilities, equipment and technical resources. Aging techs would need the most help with basic computer skills and targeted business classes, while the replacement techs would be our current hands-on students.

Another Advisory recommendation is to include basic 'soft' skills to existing technical curriculum. They report most local young jobseekers cannot pass the interview process due to poor resume writing and issues with basic professionalism such as a professional appearance, punctuality, difficulty filling out application forms and the self-confidence to speak clearly and make eye contact. ACRP would like to create a mandatory 1-unit class to cover these topics that could be invaluable to students in any of ECC's technical programs. Until then, these topics have been added to existing curriculum as small, bonus topics not featured in the course descriptions.

The Advisory Committee has also recommended, when asked in 2014, that ACRP should not focus solely on entry-level skills for entry-level technicians and should instead continue to expose students to all levels of technology and vehicle repair. This wider exposure, they said, shows students the whole picture of vehicle repair as a business system. It better prepares them to understand their function in a shop as well as the exciting advanced careers to which they can aspire.

4. Student and Program Learning Outcomes

A. Alignment. Attached as Appendix C is ACRP's SLO and PLO alignment grid. Upcoming changes and additions to curriculum as well as the inclusion of industry certification for students will cause changes to ACRP's overall SLO and PLO statements and content in the next few years. The current grid shows the importance to the department of content knowledge and critical thinking (ASE test topics, PLO #1), hands-on skills such as automotive welding (I-CAR welds, PLO #2) and the knowledge and practice of correct repair procedures (estimating, PLO #3). This balance of physical and mental skill must be maintained to create well-rounded graduates who are able contemplate, comprehend and communicate as well as create.

B. **Assessment Timeline.** Attached as Appendix D is ACRP's SLO assessment timeline, as created by TracDat. ACRP, like all other departments on campus, performed a significant SLO overhaul in recent years that resulted in much more meaningful and measurable SLO statements. Instructors have contributed a much higher level of analysis and assessment to the overall SLO project, and the new TracDat application makes comparison of previous data results so much easier because it does not treat each assessment as a standalone event. The system is set up to be an ongoing process of evaluation, assessment and improvement.

C. **Percentage of Course Assessment.** One hundred percent of ACRP classes have been assessed at least once as of fall 2012. Since then ACRP has split the repeatable classes 4abcd and 5abcd as explained above and has brought back 2A, 2B and 2C to the course rotation. These new and resurrected courses are being assessed as they are offered to maintain 100% assessment. Due to the recent ACRP SLO statement rewrite for usefulness and measurability, some existing courses have not yet been assessed using the new statements. These courses will be assessed when each class is offered in the ACRP rotation.

D. **Assessment Results.** ACRP, like all ECC departments, has observed and participated in the SLO system creation process since the beginning. It continues to be a dynamic process; changes to the rules and methods happen more frequently than the gathering, analyzing and inputting of SLO data. In 2013, ACRP rewrote and expanded to three the number of SLO statements for each course, and improved the quality and objectivity of the statements so that they are easier to observe and measure. Since almost all statements have only been assessed once, it is difficult at this time to recognize or compare trends, growth or improvement to courses or teaching methods. ACRP is looking forward to gathering and analyzing future SLO data for hints that will help students succeed in their collision repair studies.

   ACRP currently holds a 64% rate of SLO goals met, but it would be premature to judge ACRP on this number at this time. The SLO statements were written to be almost unreachable so faculty and students have something to strive for. ACRP SLO and PLO 4-column reports with full assessment results and analysis can be found in Appendices E and F, respectively. Data does not show for some courses because they were either assessed before the adoption of TracDat software which created the reports or the courses are new and have not yet been offered.

E. **Department Improvements Due to SLOs.** The most significant improvements to come from ACRP SLO assessments are improvements to the SLO statements and assessment methods themselves. The most popular comments and pledges for future changes and improvement address adjustments to teaching and testing strategies and requests for more in-lab equipment and materials. The collection, analysis and comparison of SLO data will hopefully lead to more productive communication within ACRP and between the ACRP programs at ECC and Compton Center.

   SLO Actions. New to the TracDat SLO assessment system is the concept of Actions, tasks or reminders for instructors to prepare and implement in preparation for the next assessment. The actions that did not involve changes to teaching or assessment strategy involved materials, supplies and laboratory conditions that must be addressed in ACRP budgeting and planning. Some examples include:

   - The need for more 220v single phase electrical outlets to run the MIG welders (ACRP 1A, SLO #1 - Spring 2015)

- The need for urethane primer for assessment activity rather than the donated alkyd primer used (ACRP 1A, SLO #2 and ACRP 2A, SLO #1 – Spring 2015)
- Purchase of additional small equipment to prevent long waiting lines (ACRP 1A, SLO #1 – Spring 2015; ACRP 1A, SLO #2 – Fall 2014; ACRP 1B, SLO #3 – Fall 2014)
- The need for hands-on demonstration materials and teaching aids (ACRP 1D, SLO #3 – Fall 2015; ACRP 26, SLOs #1-3 – Spring 2014; ACRP 2C, SLO #1 – Spring 2014; ACRP 4A, SLO #1 – Spring 2015)

The small equipment requested includes 2-3 stud welder and slide hammer kits, an additional Maxi welder (purchased) and spray gun cleaning kits. The teaching aids requested include a hybrid vehicle with airbag system (donation being sought), shared access to ATEC's AllData computer system and printer, paint materials to create examples and negative examples of paint color blending, time and resources to create large posters of collision repair hand tool families with name labels to hang near the toolroom, digital cameras for proper damage estimating and documentation, and video media footage of collision impacts and occupant dynamics to aid the crash analysis and fraud investigation classes. Funding for these items will be included in upcoming ACRP program planning.

F. **Related Recommendations.**

5. Analysis of Student Feedback

A. **Institutional Research Student Surveys.** A satisfaction rate of 93.26% was reported for Career Technical Education (CTE) students at El Camino College in 2014. No ACRP-specific student surveys were conducted by Institutional Research in the last 5 years, however CTE students in general were polled about their satisfaction with ECC and their current employment status. Of the 475 students that participated, 60.42% reported being 'very satisfied' with the education and training they received at ECC, and 32.84% reported being 'satisfied'. The four main reasons the polled students had stopped taking El Camino classes were: they completed the program (38%), their goals were met (37%), they transferred to another school (32%), and they got a job (17%). 72.42% of students polled reported they were now employed for pay. ACRP will request a department-specific survey be taken before the next program review.

B. **Survey Results Implications.** Because the survey polled students from all CTE departments, ACRP cannot know how relevant the results are to ACRP specifically although the numbers seem generally favorable. The survey did not ask if the employment was in the students' field of study, a detail that has been causing for-profit schools a bit of embarrassment in the news lately. These schools trumpet very high post-graduate employment, but only a small percentage of grads actually work in the field they trained for. In the future, ACRP surveys will make this important distinction.

C. **Other Relevant Surveys.** A Student Employment survey was given to students enrolled in the morning classes in spring 2013 to open dialogue in class before a resume-writing and mock job interview lecture topic. Only twenty of the 30 beginning and advanced students who took the survey had interviewed for a job before, and 13 of the 30 were unemployed and looking for work. Nine of the sixteen currently-employed students stated that they would rather work somewhere else. All six of the nine students who listed a specific job or industry for their preferred job chose collision repair/painting or similar automotive jobs. One student also included an unnamed job at Boeing, Northrop or Raytheon specifically in addition to automotive manufacturing, suggesting the students are aware of and have an interest in careers and industries in tangent areas of transportation and manufacturing/repair.

Five surveys have been conducted between fall 2009 and spring 2014 to gather student opinions of their ACRP classes and the department in general. The survey was simple: name three things they liked about their class/instructor, three things they didn't like, and three things they would change if they could. A few of these surveys also included the questions 'What did you think when you found out this was an 8-unit class' and 'If this class were split into two 4-unit classes, would you sign up for both?' The positive aspects the students reported were not surprising: the students like the amount of hands-on lab time, the capability and approachability of the instructor, and the drama-free atmosphere of the classes and department. Their dislikes included the teacher-to-student ratio during lab, the start time of the class (7:00 AM), and a shortage of parking, tools and equipment. A surprising number of students, whether due to fear of retribution or simply honesty, reported that there wasn't anything they disliked about the class or instructor. The majority of the students (as well as ACRP and ATEC instructors asked) preferred an 8-unit class over 4-unit or 3-unit classes.

D. **Related Recommendations.**

6. Facilities and Equipment

A. **Existing Facilities & Equipment.** Now housed in the new Center for Applied Technology building, ACRP has the new opportunity to assess how our existing and planned technology and equipment can be put to the best use. Many visitors have complimented the lab space and lighting, and industry partners have responded eagerly to ACRP's partnership invitations to hold their training and demonstration sessions at ECC and include a few seats for ACRP students.

B. **Short-Term Needs.** The new CAT facility will need a few large and some small budget items to make it safe, secure and fully functional for ACRP students. They are, in order of department priority:

- Locks for the paint and lacquer thinner room doors
- Finish the filtration and compressed air line connections in the spray booths
- Outdoor working light to supplement emergency lighting in the yard
- Compressed air lines and electrical sockets for outdoor work stalls
- 220v 3-phase power in multiple locations for resistance spot welder
- Roof extensions for outdoor prep stations, fabrication lab and spray booth areas
- Vacuum bag attachments for hand-held sanders to minimize inhalation hazards
- Concrete or thick metal ramps for vehicle access to spray booths
- Floor sealer for interior lab floors

C. **Long-Range Needs.** Equipment and items pending future grant funding are:

- Four-post vehicle hoist
- Second frame rack with computerized measuring system and diagnostic scanners
- Power Post kit with in-floor vehicle anchoring system
- Re-frame, weigh and safely hang bas-relief Porsche on west wall of lab
- Lockable storage area for student-owned and donated vehicle parts
- Donated hybrid or electric vehicle for repair training purposes (could be shared with Auto Technology)
- Aluminum welding and repair tools

This list of new and updated equipment represents ACRPs commitment to the best quality, most industry-relevant training opportunities for students. Without it, ACRP will simply have a collision repair and paint program. With it, ACRP will have a collision repair and paint program worthy of industry partnerships, vital for existing technician lifelong learning and career progression, and inspirational and exciting to current and future students alike.

D. **Related Recommendations**

7. Technology & Software

A. Existing Technology. ACRP is fairly up-to-date with technology and equipment with the exception of aluminum repair tools, computerized frame straightening capability and a computerized diagnostic scanner. The CTEA grants ACRP won in 2011 and 2012 helped immensely to fill in blanks and increase quantities of small pneumatic and hand tools in the toolroom that were outdated or had been broken or damaged. *ACRP now has a fully stocked toolroom according to NATEF recommendations.* ACRP's new immediate problem is technology usability and compatibility with our new building, for example the lack of 3-phase electrical sockets that prevent us from using our resistance spot welder. The repair and welding of aluminum is an industry hot topic for 2015. ACRP is addressing the need for training in aluminum repair by applying for the I-CAR Education

Foundation grant in 2015 in which aluminum-specific tools and attachments for our welders were requested. Until granted or funded, ACRP has scheduled vendor demonstrations of aluminum repair tools for the students through Advisory Committee member connections.

Funding for new frame straightening equipment and a vehicle hoist will be requested through CTEA in 2016. ACRP currently has one frame rack and no vehicle hoist. Our existing frame rack (Chief EZ Liner II) has a computerized measuring system (Genesis Velocity), but it is outdated and the vehicles produced in the last 20 years - the vehicles most in need of precise repairs - are invisible to our current computer system. By choosing a rack system different from our existing Chief, ACRP will be able to offer students a wide variety of training options to cover the needs of more repair shops, including the ability to host training and certification sessions for existing local technicians. A vehicle hoist serves three important functions in the lab: first, to lift the vehicle to inspect and perform repairs, second, to safely lift vehicles to show a large group of students various frame and construction designs and damage locations underneath a vehicle, and third, to lift vehicles to a comfortable working height for older or physically challenged students. Funding for a frame rack, measuring system and hoist will be requested through CTEA in 2016.

One piece of technology that was strongly recommended by multiple Advisory Committee members is a diagnostic scanner. This handheld device plugs into a vehicle and interfaces with the computer system to tell the technician what system is malfunctioning, where the trouble is located, and can even report stored data such as the occurrence of electrical signals sent to the airbag system, etc. A professional grade scanner can also reprogram common collision repair problems such as resetting an airbag warning light on the dash after the airbags have been replaced. The ability to use this scanner is becoming mandatory in auto mechanical repair and will soon be mandatory for collision techs as well. Funding for diagnostic scanners will be requested through CTEA in 2016.

Lastly, ACRP will need campus IT help in locating a computer lab for occasional class use and installing and maintaining copies of the CCC One and Mitchell Estimating software granted by the I-CAR Education Foundation. ACRP has been given 30 licenses for each, and must only fill out a short Foundation survey to receive annual updates. This software will be instrumental to the success of our planned ACRP 3B class, Computerized Damage Estimating.

B. Immediate Needs. ACRP's equipment and technology needs go hand-in-hand. A spreadsheet showing cost estimates and justification for equipment, technology and staffing can be found in Appendix G. This appendix also shows the overall prioritization for all ACRP needs. ACRP's immediate needs include:

- I-CAR PDP-EE curriculum as listed in Section 3E-3.

- Aluminum repair and welding equipment
- Diagnostic scanner(s) and faculty training

C. Long-Range Needs. Items that will be needed in the next 2-4 years are:

- Class access to computer lab with donated software installed (30 licenses)
- Second frame rack with computerized measuring system and faculty training, as listed in Section 6C

An in-progress trend ACRP should begin considering now is the inclusion of composite materials such as carbon fiber and fiber-reinforced plastics in standard production vehicles. High-end and performance vehicles as well as aftermarket performance and aesthetic add-on kits have featured panels and structural parts made of these materials for years, but they are starting to be seen on regular production vehicles as well. With the industry's obsession for lighter, stronger parts to improve fuel economy and passenger safety, value can easily be seen in the knowledge of working with and repairing composites and plastics. ACRP can, if it chooses, become a lone source of training in automotive composites and repair in Southern California, which could tie in very nicely with local businesses such as Honda Research and Development, Five-Axis (Toyota aftermarket parts) and Tesla, to name a just few. ACRP will meet and could partner with the Manufacturing department to explore options in this technology.

D. Related Recommendations.

8. Staffing

A. Current Staff. ACRP staff includes one full-time instructor, four part-time instructors, one special assignment instructor, one full-time toolroom attendant and two part-time attendants that are shared with other departments.

B. Future Staffing Needs, Short Term and Long Term. In the short term, ACRP needs to hire one part-time instructor to handle the expansion of ACRP's summer classes and one part-time or special assignment administrative assistant to help with student tracking and job placement, student industry certifications, new student outreach and department promotion, and industry partnerships, training sessions and donations.

In the long term (2-4 years), since ACRP plans to split its certificates and its 8-unit classes (as described in section 2G), the department will need to hire two part-time instructors to teach in the afternoons, on Saturdays and/or during summer session. Even in a rotation, more classes will need to be offered to make sure students can achieve their academic goals efficiently. Splitting the certificates into targeted career training tracks

will necessitate students taking particular classes, not just any ACRP class to satisfy a 32-unit requirement. More classes will also require more hours from the toolroom staff.

C. **Related Recommendations: Lab Assistants** When surveyed, students frequently request extra instructors or knowledgeable helpers during lab to compensate for the large student-to-teacher ratio of a combined lab. To comply and to help instructors monitor the lab for safety, one work-study student has been hired each semester to assist in the lab which is a challenging job best suited to a recent graduate rather than a student peer. Adult volunteers with a background in collision repair have also been welcomed to assist in the lab, although finding a reliably committed volunteer has been a challenge. While ACRP continues to struggle to find a perfect solution to this issue; the current solution is one of simple kindness: most advanced students are happy to assist beginners with basic questions. Teaching a method or procedure to someone else forces the advanced student to remember and perform it correctly himself, which solidifies the procedure in his memory too.

9. Future Direction & Vision

A. **Industry Changes and Their Effects on ACRP.** The I-CAR Education Foundation survey and Advisory Committee have identified a few trends affecting the industry that will need consideration by ACRP. First, the importance of aluminum body panel construction, composite materials repair, hybrid/electric vehicle safety, and a technician's ability to connect and use a diagnostic scanner will necessitate new equipment and faculty training. These topics will attract existing technicians looking to update their skills, and these techs will not want to commit more than one semester, possibly no more than one week, to a class. ACRP will have to act quickly to develop, approve and offer curriculum to be of help to these technicians. Second, the recent recession has started a trend of industry consolidation. The overall number of shops is shrinking (45,882 nationwide in 1995, 43,535 in 2007, and 40,488 in 2013), but the size of each individual shop is growing to become a super shop that serves more than one dealership (average 5,761 square feet with 6.1 employees in 1995, 10,035 sq. ft. with 8.4 in 2007, and 13,524 sq. ft. with 13.3 in 2013). Technicians that work in these new, larger, more efficiently run shops are being split into two levels: highly trained, industry-certified technicians and lesser-trained 'installers'. One can imagine the pay difference between the two positions (approximately $100,000/year vs. barely living wage), and ACRP naturally wants to make sure its grads are on the upper end of this split. A third trend in the collision repair industry is an aging workforce. Current technicians likely did not receive college training, may not be computer literate, and are working in a career that requires a degree of physical stamina they may no longer have. A logical career move for people with so many years of experience is to transfer into damage estimating, shop management, or other business positions, but a lack of computer and business training forbids these techs from moving up and freeing up positions for new

technicians. As mentioned in section 3F, ACRP intends to create a mutually beneficial bridge program for existing techs that partners techs and techs-in-training for apprenticeship for young techs as well as teaches older technicians the computer and business skills they need.

El Camino College ACRP is one of only five remaining community colleges to offer auto collision repair classes. The others are ECC Compton Center, LA Trade Tech, Cerritos College and Cypress College. Long Beach City and Rio Hondo Colleges closed their auto programs in the last 3 years, and Santa Monica College, Goldenwest, Harbor College and others closed their autobody programs a few years ago. For-profit school WyoTech and their well-respected automotive program were shut down in Long Beach in 2015 and were replaced by for-profit Universal Technical Institute (UTI). Neighboring Southern California Regional Occupational Program (SCROC) has eliminated automotive and their well-loved upholstery classes to focus on the medical and child development fields.

Great opportunity exists for ACRP to make a real name for itself in the South Bay and to become a destination school for young students and existing technicians alike.

ACRP's competition has begun to focus on certain areas and aspects of collision repair to give their programs a marketable 'feature' to highlight. Cerritos College recently opened their business training facility to cater to the shop owner and manager looking to increase productivity and efficiency in a shop and to keep abreast of new laws and liabilities. Cerritos uses the I-CAR curriculum for most of its technician training classes and has also built a good reputation for their estimating program, but they do not take it to the next level like ACRP does with its crash analysis and fraud investigation classes geared toward the insurance adjusters that estimators work with on a daily basis. Cypress College is NATEF certified and offers certificates in auto detailing as well as automotive sales and service. UTI Long Beach offers multiple I-CAR certifications (points) but does not grant Platinum certification. UTI also offers equipment certification in Axalta paint products and Chief alignment systems. Compton College intends to specialize in aluminum repair and panel fabrication at their facility. LA Trade Tech and ACRP have not yet chosen an area of specialization and ACRP intends to seek Advisory Committee guidance as to how best serve the needs of local industry.

Two local trends identified by potential students, local community members and advisory committee members interviewed between 2012 and 2015 are the elimination of high school auto collision programs and the lack of a local upholstery/OEM interior refurbishing program. ACRP has received many requests for upholstery classes and it wasn't until an Advisory Committee member expressed an industry need for interior refurbishing that a short series of upholstery classes made sense for collision repair. ACRP will consider the request and research its options.

The second trend of high schools eliminating their auto programs means potential students are left with fewer and fewer choices for collision repair training, *and must wait until they are in college to begin their career training*. Students who are naturally

inclined to build and repair may assume the world has no place for them to shine or that their talents have no value because their school experience did not acknowledge or encourage pursuit in hands-on technical activities. These students may never go to college and are likely destined to become the lower-paid installers mentioned above. Compare this scenario to, say, professional sports where students have many choices beginning in elementary school or before and one will see how generally unprepared young people are to work with their hands and how tragic a lack of exposure to technical, hands-on subject matter is at a K-12 level. A two-year ACRP program is not nearly enough time to take a student who knows nothing of basic tools or repairs (one student didn't know what sandpaper was) and turn him into a competent, prepared and well-rounded employee. ACRP has already partnered with Youth Build to offer an introductory class for high school students and intends to partner with more local schools to articulate classes and encourage high school students to take classes at ECC while enrolled in high school.

Thankfully, a recent counter-trend in high schools is the nationwide emphasis on STEM (Science, Technology, Engineering and Math) training in K-14 schools. Programs with an established history such as automotive tend to get left out of the STEM limelight in favor of flashy new topics such as robotics, green technology, computer programming and computerized prototyping and manufacturing, but the public's overall changing mindset of the benefit of hands-on, productive training for good-paying jobs is reassuring. Jobs that used to be regarded as lower-class 'blue collar' are now being seen for the skilled and lucrative 'lab-coat white' collar jobs they are. ACRP intends to make use of this trend and publicity to market its courses and careers to local youth.

B. **Direction, Vision and Achievement Plan.** ACRP has every intention of growing to become not just a survivor of budget cuts but a destination school for high school graduates and existing technicians. It will become a hub of interaction between student technicians, existing technicians and their employers as well as automotive tool and equipment companies. ACRP will do this by working to bolster its value to the campus and community by creating trained, skilled and industry-certified graduates actively sought by local and regional employers. This goal will take significant time, money and effort and cannot be reached by ACRP without campus and industry assistance. The basic steps to achieve this goal, in order, are as follows:

    1. Make industry certifications available to students (ASE and I-CAR certification for students, NATEF certification for ACRP).
    2. Split the existing 32-unit Certificates into 'fast track' job-specific Certificates of 18-22 units.
    3. Create an advertising campaign to introduce ACRP to local shop owners. This campaign will aim to create advisory partnerships, job placement opportunities and student tracking assistance.

4. Boost students' competitive spirit and personal efforts by initiating a media-intensive annual inter-campus student car show/job fair. ACRP will invite auto technology programs, and later, high school programs to participate as well.
5. Seek industry donations and donations-in-kind to make sure ACRP teaches the latest repair methods using up-to-the-minute materials and technology.
6. Create a second advertising campaign to trumpet student skills and job readiness to employers and high school staff to focus existing demand for quality hires and quality training in ACRP's direction.
7. Position ACRP as an industry training center, not just a community college, to attract existing technicians seeking to update their skills and to challenge local shop owners' stereotype of the college as a place where automotive students merely read textbooks and watch filmstrips. Leverage tool and equipment company vendor partnerships to provide sponsored, brand-specific certification training on site.

E. **Related Recommendations.**

10. Prioritized Recommendations

A. Prioritized List of Recommendations and Needs. As detailed in Appendix G, the integrated list of ACRP priorities, according to overarching department goals, are:

1. Building fixes as listed in section 6B
2. Industry certifications
    a. I-CAR curriculum for students and faculty certification training
    b. ASE student testing program
    c. NATEF shop certification
3. Split existing Certificates into smaller, targeted Certificates
    a. Offer afternoon and Saturday classes (hire 2 part-time instructors)
    b. Complete curriculum updates to 3A class
    c. Install software in campus computer lab
4. Industry partnership ad campaign
    a. Hire administrative assistant/student tracker/job placement liaison
    b. Create secure online student resume website and user base
5. Student car show/job fair
    a. Student job placement ad campaign and industry outreach
    b. Women's outreach
    c. Consider SkillsUSA participation for students
    d. Attract media and industry attention at the local, state and national level
    e. Attract industry and community donations
6. Seek industry donations and donations-in-kind (ongoing)

a. Aluminum repair/welding equipment, diagnostic scanner(s)
b. Large equipment – frame rack, hoist, Power Post, computerized measuring system update
c. Hybrid or electric vehicle for safety and repair demonstration purposes

7. Become an industry training center
    a. Partner with vendors to give brand-specific certifications on-site
    b. Create curriculum to address business topics relevant to auto collision
    c. Create bridge program for existing technicians to business positions

B. **Justification for Prioritization.** List items were arranged in this way according to basic day-to-day necessity, successful job placement and efficient graduation paths for students, industry partnership and donation needs, and the needs of existing technicians to update their training (an underserved market). The new building completion items must come first for basic shop usability, of course. The industry certifications will make ACRP graduates more valuable to employers and is something that can be added to existing curriculum without the need for rewriting or Curriculum Committee review. NATEF certification will make the shop more attractive and 'legitimate' to local shops and potential industry donors. Creating smaller targeted Certificates will allow students to complete program requirements in less time with more focused training for the job title of their choice.

ACRP cannot exist in isolation and more interaction and communication with industry is necessary, hence the advertising campaign to reach out to local shops and request for an administrative assistant. This is not higher on the list because to present the best image, ACRP needs to 'have its act together' and have a sufficient number of job-ready students to offer these shops. The student car show/job fair will give less motivated or hesitant students an exciting goal to work towards with friendly competition, plenty of attention, and the tangible enticement of prizes such as donated tools. This annual event could become the biggest automotive job fair in the region – its working title is the Auto Draft (which suggests an event where employers compete over and spend considerable money on the newest talent, similar to the NFL or NBA Draft in sports). Of course, ACRP will need to seek donations to fund its equipment, promotion and event expenses.

Lastly, the goal that is most likely to expand ACRP beyond its space in the CAT building: promoting ACRP as a training center available to existing technicians as well as new technicians where short, one-day or one-week classes can be taught by visiting vendors offering specialized brand-specific training in a modern and high-tech facility. These classes will keep ECC top of mind for shop owners, and could provide the basis for the bridge program that could serve hundreds or thousands of technicians in Southern California.

Career and Technical Education – Supplemental Questions

1. Occupational Demand for the Program

Demand for collision repair, refinishing, OEM (Original Equipment Manufacturer, aka automotive manufacturing companies such as Honda, Toyota and Tesla) automotive design and manufacturing, aftermarket auto parts design and manufacturing, as well as automotive restoration and high-performance specialists, remains very strong in Southern California, the hub of Car Culture and birthplace of the custom car movement in the 1950s which continues to influence automotive design and performance today. The popularity of automotive build-themed television shows is at an all-time high, and at least one automotive car show, swap meet, cruise night or racing event is held nearly every day year-round in the Los Angeles-Orange County area. People here love their cars.

Within a 10-mile radius of ECC, approximately 200 collision repair and customization shops exist, a seemingly incredible number. Nationwide, the average number of technicians and technician trainees (helpers) at each shop is 13.3 according to the 2013 I-CAR Education Foundation survey, *Snapshot of the Collision Repair Industry*. This number, if applied locally, calculates to 2,660 technicians employed within ten miles of campus alone. A more realistic estimate is half that number, but certainly more than ACRP and its sister program at Compton Center can replenish when technicians retire to transfer to a new location (which happens frequently as technicians follow certain managers or insurance company partnerships from shop to shop). The local job market in collision repair, according to the Advisory Committee in 2013, has recovered from the recent economic recession and is ready to grow in Los Angeles County.

Although repair centers are trending away from small 'mom and pop' shops and repair departments that are part of a dealership, the independent shops that remain are growing in size and becoming very smart and efficiently run businesses that are 'all about the numbers' and that perform repairs 'by the book'. Traditionally, the career title of bodyman, painter or mechanic spanned multiple generations in a family and no college degree or business training was needed. Now, a shop owner must know as much about business and accounting as he does high-tech automobiles and manufacturer-specific repair procedures. The industry has officially turned from blue collar to 'lab-coat white' collar. This significant change has caused the demand for high-tech skilled and industry-certified technicians to rise steadily over the last ten to 15 years and shows no sign of slowing. Aging technicians who learned on the job are retiring and shops are struggling to find capable, certified young people to replace them. Local high schools, ROPs, and even some local community colleges have shut down their automotive programs which only increases demand at the few remaining colleges including ECC. ACRP intends to be a destination school for high school students and existing technicians seeking training in collision repair and refinishing.

2. Uniqueness of the Program within the Region

ACRP's most unique feature is the 20-series classes (20, 22, 24, 26) that focus on crash analysis and fraud investigation, topics vital to automotive insurance companies and shop estimators but not usually taught to technicians. These four classes lead to two Certificates of Accomplishment in these subjects. Sister campus Compton Center is the only other college or training center in the area to offer these classes.

ACRP has been pursuing NATEF certification for over 5 years, and the process has been on hold for the last two. The final step is to assemble a paid review committee and pass their inspection. If certified, ACRP would be one of only four colleges in the state of California to be NATEF certified for auto collision, a distinction that signifies ACRP has met ASE training standards for proper repair procedures and has proven that it has sufficient tools and student support systems to be considered a high-quality training center. Industry shops and materials manufacturers are much more likely to donate to NATEF certified schools, which propels not only ACRP's reputation but our ability to teach using the latest vehicles, parts and supplies as well.

If ACRP fulfills its goal of initiating an upholstery/OEM interior refurbishing course series, it may be the only one of its kind in Los Angeles/Orange County. Upholstery classes used to be very common - SCROC had a popular one - but almost all have closed down leaving a scattering of workshops and Community Education classes that do not focus on the lucrative collision repair concept of refurbishing. After an accident, a vehicle's interior will need to be properly repaired and cleaned when parts are not damaged enough to warrant replacement. If replacements are needed, the correct color may not be available and the plastics, vinyls and fabrics of the door panels, dashboard pieces, seats, carpet and headliner may need to be professionally and imperceptibly changed by paint, dye or decal application. The need for technicians skilled in this area has been identified by Advisory Committee members.

3. Completion, Success and Employment Rates

Data for ACRP success and retention rates compared with state average is shown below. Data highlighted in green shows semesters where ACRP rates exceeded state average.

Success and Completion Rates

Term	% Completion	State Average	% Success	State Average
Fall 2005	79.70	88.41	48.10	76.50
Spring 2006	78.50	85.47	60.00	73.75
Fall 2006	84.60	88.20	66.20	74.39
Spring 2007	81.00	85.52	77.60	73.84

Fall 2007	80.00	89.08	67.10	77.00
Spring 2008	83.50	88.10	74.70	75.77
Fall 2008	82.70	89.89	61.30	77.02
Spring 2009	89.80	89.40	70.50	75.73
Fall 2009	84.80	90.05	60.70	76.89
Spring 2010	86.70	88.55	62.80	75.79
Fall 2010	83.20	89.70	72.00	78.18
Spring 2011	83.50	90.06	65.20	79.11
Fall 2011	89.90	88.75	75.20	78.42
Spring 2012	81.10	89.67	69.80	78.73
Fall 2012	87.20	90.42	73.70	77.14
Spring 2013	92.00	91.20	77.90	77.61
Fall 2013	92.50	91.72	82.60	79.95
Spring 2014	95.80	91.74	84.90	80.48
Summer 2014	83.30	90.38	77.80	85.71
Fall 2014	n/a	90.08	n/a	78.57
Spring 2015	n/a	n/a	n/a	n/a
Ten-Year Average	**85.25**	**89.32**	**69.90**	**77.53**

As the numbers show, ACRP continues to make progress toward higher success and retention rates. ACRP has bested the state average an increasing number of times lately and intends to continue the trend *without sacrificing academic rigor*. ACRP rates were second best in the Division for spring, 2014. This is significant because the Division ranked highest in the school for success and retention the same semester.

No official system currently exists to track student employment, although the funds to cover the faculty time to create one have been requested and denied in Plan Builder for multiple years. Faculty would like to create a login-protected website where auto collision and auto technology students and alumni at all five local colleges could post their resumes and a few photos of their work. Local shop owners could log in to view potential hires in one convenient place and could request to contact the student. By owning this site, ECC and the other colleges could track who is looking to hire, who is being looked at, and what positions and pay rates are being offered. This website would tie into ACRP's planned inter-campus student car show and job fair to create a year-round, convenient place for shops to look for quality help with the hope that they wouldn't struggle to look anywhere else.

4. Licensure Exams

Although practicing collision repair does not require a state license, two industry certifications are highly recommended: ASE (National Institute for Automotive Service Excellence) and I-CAR (Inter-Industry Conference on Auto Collision Repair). The ASE Certification process involves the technician taking a rigorous pass/fail multiple choice test,

or series of tests for Master Technician status ($36 registration fee and $35 per test). ASE Certification is valid for five years. ASE Certification is almost imperative for auto mechanics, but a collision repair technician with this certification is respected and valued among employers because of the difficulty of the tests – one cannot simply buy his way into certification, he must earn it.

Plan Builder requests have included plans for developing an ASE test fee reimbursement fund, since students are reluctant to spend their own money on a professional-level test rumored to be 'tricky', but the requests have been denied each year. An alternative that ACRP will pursue is the ASE Student Certification program that allows students to take modified tests at a total cost of $30 per year for two attempts at each test in their area of study, in this case, collision repair. If successful, the program could easily be expanded to include testing for Auto Technology students as well. ASE Student Certification test results and performance analysis are provided to participating schools, which would provide excellent feedback data for SLO assessment and teaching effectiveness.

I-CAR Platinum certified status is more valuable to the hopeful collision repair jobseeker than ASE. Collision repair facilities that maintain a near 100% level of I-CAR Platinum certified technicians receive I-CAR Gold Class shop status, which makes the shop very attractive to insurance companies and customers who value jobs completed on time to high standards. The I-CAR Platinum 3-level certification process begins with the technician attending a series of eight to eleven $125 one-day lectures on topics related to their specific job duties and taking a short exit exam. A technician is then expected to maintain his I-CAR training by attending five to eleven more courses in the following two years (levels) before switching to annual refresher courses. Completed courses are valid for only one year.

It is easy to see why employers would rather hire technicians who are already I-CAR Platinum certified than pay to send them to training, especially since certification remains with the technician, not the shop, when a technician quits or transfers. El Camino ACRP can purchase I-CAR training materials and assign Platinum certification to students through I-CAR's Professional Development Program (PDP-EE). ACRP has requested to participate in this program by including PDP-EE materials in our 2015 I-CAR Education Foundation grant request. Including I-CAR content in ACRP curriculum will be simple since we already teach this material - it is simply the industry-correct safety and repair methods branded by I-CAR.

5. Advisory Committee

For the past three years, ACRP and ATEC have held combined advisory meetings. This has worked out very well for everyone involved and we intend to continue the practice. It forces us to get together and plan, review and compare in ways we don't get to during brief hallway encounters or email exchanges. The ATEC department has seen the retirement of three full-time and one part-time faculty in the last 3-4 years, and the hiring of two new full-time

instructors, one in 2014 and one in 2015. This change of guard presents new opportunities and new ideas for collaboration, success strategies and goal setting.

To date, the advisory board has been positive and helpful with advice and suggestions for changes to the ACRP program; and some exciting ideas have been proposed. They seem consistently and generally pleased with the organization and direction of the departments, and lament with us the lack of unlimited resources and speedy implementation processes to really create something spectacular. However, in instructor Fairchild's opinion, there are not nearly enough shop owners and senior technicians on the Board. It seems there is a disconnect or proxy barrier between what shops think and need and what ACRP hears. It is expected that the proposed industry outreach advertising campaigns will be very helpful in connecting ACRP with local shops. It would be fantastic to have a network of 30-40 local shops that could be polled or questioned at the touch of a Send Email button.

Some attractive ideas and suggestions that have come out of Advisory meetings in the last two years are:

- ACRP should participate in the nationwide, Olympics-style competition called SkillsUSA that awards students for correctly and efficiently performing repairs to vehicle parts in a variety of categories. It makes for good press and the students can add the experience to their resumes.

ACRP intends to seriously consider this exciting suggestion and categorizes it with the student car show and other media attention in our program's Direction and Vision plan. It provides a great opportunity for students to see and compete with students beyond the walls of ECC and to add participation in a nationally recognized industry competition to their resumes.

- Write letters to request vehicles for donation. All that is required is a crush certificate stating the vehicle and its parts will be crushed instead of sold or bartered when the vehicle is no longer useful.

ACRP would like to replace its existing demonstration vehicle with something newer, preferably a hybrid or electric vehicle. ACRP has been told that ECC is leery of accepting whole vehicles due to the space they take up and the potential for various liabilities they represent. The department will need to meet with ECC administrative personnel to explore options.

- Write separate letters to request 'scratch and dent' parts from auto manufacturers' warehouses. These parts also cannot be sold or bartered.

Once the new CAT building is in order and a safe place to store donated parts can be arranged, ACRP looks forward to pursuing this suggestion. The department attracts various fenders, hoods and bumper covers for demonstration and student practice, but when specialty items are needed such as aluminum or composite parts, door skins and

door shells, and sections of vehicle bodies, ACRP has no current source for obtaining these parts at a low cost.

- Create a quicker 'path to the top' for grads entering shops: create an internship placement program and provide a career counselor for a better explanation of careers available and assistance with soft skills such as basic professionalism.

This suggestion is easy to follow because multiple plans for implementation have already begun. One obvious 'foot in the door' strategy for new grads seeking jobs is the I-CAR and ASE industry certification programs planned for students. Curriculum for a mandatory one-unit (or two-unit, as requested by one advisory member) course has already been written for a soft skills/resume writing/interview strategies class specific to automotive fields. As for career counselling, ACRP really needs to make time to work with Student Services and campus counselors to update and expand the literature and information they give to students. These good people really do not know the automotive industry or the tangent career options available to a wide variety of students outside the auto collision department. ACRP plans to request help from the ATEC department (and any other I&T department that would like to participate) to create an informative presentation for counseling staff that could be videotaped for student viewing.

- Continue to provide exposure to all levels and aspects of collision repair even if the topic is better suited to advanced technicians (such as frame straightening) rather than focusing and drilling only on basic skills. An ACRP grad should know and be able to perform the basics and should understand the whole repair process even if he will need on the job training to be proficient at it.

The I-CAR Education Foundation 2013 survey, *Snapshot of the Collision Repair Industry,* lists ten specific skills that 50% or more of polled shops consider to be necessary basic skills for entry-level technicians. These include such tasks as 'remove and replace bolt-on parts' and 'prep for paint'. ACRP feels confident its advanced students and graduates have a satisfactory grasp of these skills, but will look at curriculum and SLO statements during upcoming curriculum reviews to make sure these skills are measured and attained. One of the ten skills, 'set up and measure' refers to vehicles on a frame rack and is our weakest skill of the ten. An additional frame rack and an updated copy of software for our computerized measuring system will boost ACRP's confidence in graduate skills in this area.

A. Advisory Committee Membership & Credentials:

Diana Andrew Student Representative ACRP & ATEC	Kathryn Carter Student Representative ACRP & ATEC

Steve Corbin
Los Angeles Fleet Sales Manager
NAPA Auto & Truck Parts

Bob Dalton
Los Angeles HQ Manager
NAPA Auto & Truck Parts

Randy DeLeeuw
Los Angeles Human Resources Manager
NAPA Auto & Truck Parts

Brian Demeules
Student Representative, ACRP

Joseph DiDonato
Collision Training Administrator
Toyota Motor Sales, USA Inc.

David Eddings
Owner, NAPA Auto & Truck Parts

Charles Eddy
Principal Modeler
Honda R&D Americas, Inc.

Roger Godin
Senior Account Manager
Finishmaster Auto Paint & Supply

Rob Lee
Account Representative
South Bay Tools/Snap-On Industrial Brands

Alfredo Ortiz
Territory Manager
Western States Marketing/NAPA

Steve Rall
Outside Sales, NAPA Auto & Truck Parts

Angelica Sepulveda
Manager
L&J Auto Body and Paint, Lawndale

Danny Votel
Regional Sales Manager
PPX Reps and DeVilbiss

David Wong
Product Support Specialist II
Mitsubishi Motors

B. Advisory Meeting Minutes. Meeting notes and minutes can be found in Appendices H1-4.

Appendix A

ACR/P Enrollment and Grade Distribution **State Average**

Fall 2010	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	17	70.6%	11.8%	5.9%	0.0%	0.0%		0.0%	11.8%	88.2%	88.2%		
1C - Fairchild	23	30.4%	43.5%	17.4%	0.0%	4.3%		4.3%	0.0%	91.3%	95.7%		
4abcd - Steele	19	21.1%	36.8%	15.8%	5.3%	10.5%		0.0%	10.5%	73.7%	89.5%		
5abcd - Rodriguez	33	15.2%	18.2%	15.2%	3.0%	12.1%		12.1%	24.2%	48.5%	63.6%		
20 - Owens	15	26.7%	33.3%	13.3%	13.3%	6.7%		0.0%	6.7%	73.3%	93.3%		
Total/Average	107	32.8%	28.7%	13.5%	4.3%	6.7%		3.3%	10.6%	75.0%	86.1%	78.18%	89.70%

Spring 2011	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	16	12.5%	18.8%	18.8%	6.3%	12.5%	0.0%	6.3%	25.0%	50.0%	68.8%		
1D - Fairchild	30	26.7%	36.7%	13.3%	13.3%	6.7%	3.3%	0.0%	0.0%	76.7%	100.0%		
4abcd - Earlywine	28	7.1%	17.9%	46.4%	10.7%	3.6%	0.0%	0.0%	14.3%	71.4%	84.7%		
5abcd - Rodriguez	28	17.9%	28.6%	7.1%	15.4%	10.7%	0.0%	3.6%	25.0%	53.6%	71.4%		
24 - Owens	13	61.5%	7.7%	0.0%	0.0%	15.4%	0.0%	7.7%	7.7%	69.2%	84.6%		
Total/Average	115	25.1%	21.9%	17.1%	9.1%	9.8%	0.7%	3.5%	14.4%	64.2%	81.9%	79.11%	90.06%

Fall 2011	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	15	26.7%	46.7%	6.7%	0.0%	6.7%		6.7%	6.7%	80.0%	86.7%		
2A - Fairchild	23	21.7%	26.1%	21.7%	13.0%	8.7%		0.0%	8.7%	69.6%	91.3%		
4abcd - Kooiman	30	76.7%	6.7%	0.0%	0.0%	6.7%		6.7%	3.3%	83.3%	90.0%		
5abcd - Rodriguez	26	15.4%	42.3%	11.5%	15.4%	0.0%		0.0%	15.4%	69.2%	84.6%		
26 - Owens	15	33.3%	13.3%	26.7%	6.7%	20.0%		0.0%	0.0%	73.3%	100.0%		
Total/Average	109	34.8%	27.0%	13.3%	7.0%	8.4%		2.7%	6.8%	75.1%	90.5%	78.42%	88.75%

Spring 2012	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	18	50.0%	11.1%	5.6%	5.6%	5.6%	0.0%	0.0%	22.2%	66.7%	77.8%		
1B - Fairchild	21	19.0%	33.3%	9.5%	9.5%	23.8%	0.0%	0.0%	4.8%	61.9%	95.2%		
4abcd - Kooiman	28	64.3%	10.7%	0.0%	3.6%	0.0%	0.0%	10.7%	10.7%	75.0%	78.6%		
5abcd - Rodriguez	20	50.0%	10.0%	15.0%	0.0%	0.0%	0.0%	10.0%	15.0%	75.0%	75.0%		
22 - Owens	18	33.3%	16.7%	16.7%	0.0%	0.0%	11.1%	5.6%	16.7%	66.7%	77.8%		
95abcd - Fairchild	1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%		
Total/Average	106	52.8%	13.6%	7.8%	3.1%	4.9%	1.9%	4.4%	11.6%	74.2%	84.1%	78.73%	89.67%

Fall 2012	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	20	20.0%	15.0%	25.0%	15.0%	5.0%		0.0%	20.0%	60.0%	80.0%		
1C - Fairchild	28	3.6%	39.3%	35.7%	10.7%	7.1%		0.0%	3.6%	78.6%	96.4%		
4abcd - Kooiman	32	84.4%	9.4%	0.0%	0.0%	0.0%		0.0%	6.3%	93.8%	93.8%		
5abcd - Rodriguez	26	15.4%	26.9%	3.8%	7.7%	15.4%		0.0%	30.8%	46.2%	69.2%		
20 - Owens	24	20.8%	50.0%	8.3%	0.0%	4.2%		8.3%	8.3%	79.2%	91.7%		
95abcd - Fairchild	3	100.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	100.0%		
Total/Average	133	40.7%	23.4%	12.1%	5.6%	5.3%		1.4%	11.5%	76.3%	88.5%	77.14%	90.42%

Spring 2013	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	20	15.0%	35.0%	30.0%	10.0%	5.0%		0.0%	5.0%	80.0%	95.0%		
1D - Fairchild	20	15.0%	30.0%	30.0%	20.0%	0.0%		0.0%	5.0%	75.0%	95.0%		
4abcd - Kooiman	32	87.5%	9.4%	3.1%	0.0%	0.0%		0.0%	0.0%	100.0%	100.0%		
5abcd - Rodriguez	23	30.4%	13.0%	13.0%	8.7%	13.0%		0.0%	21.7%	56.5%	78.3%		
22 - Owens	16	31.3%	18.8%	12.5%	0.0%	18.8%		6.3%	10.5%	62.5%	87.5%		
95abcd - Fairchild	2	100.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	100.0%		
Total/Average	113	46.5%	17.7%	14.8%	6.5%	6.1%		1.1%	7.0%	79.0%	92.6%	77.61%	91.20%

Fall 2013	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	18	50.0%	11.1%	11.1%	11.1%	5.6%		0.0%	11.1%	72.2%	88.9%		
2B - Fairchild	24	16.7%	41.7%	8.3%	20.8%	8.3%		0.0%	4.2%	85.7%	95.8%		
4abcd - Rodriguez	19	26.3%	31.6%	10.5%	10.5%	5.3%		0.0%	15.8%	68.4%	84.2%		
5abcd - Kooiman	43	74.4%	0.0%	9.3%	7.0%	0.0%		0.0%	9.3%	83.7%	90.7%		
24 - Owens	21	28.6%	23.8%	33.3%	0.0%	9.5%		0.0%	4.8%	85.7%	95.2%		
95abcd - Fairchild	2	100.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	100.0%		
Total/Average	127	49.3%	18.0%	12.1%	8.2%	4.8%		0.0%	7.5%	82.6%	92.5%	79.95%	91.72%

Spring 2014	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
1A - Fairchild	19	26.3%	42.1%	15.8%	5.3%	0.0%	0.0%	0.0%	10.5%	84.2%	89.5%		
2C - Fairchild	27	11.1%	51.9%	18.5%	0.0%	14.8%	0.0%	3.7%	0.0%	81.5%	96.3%		
4abcd - Rodriguez	17	11.8%	23.5%	41.2%	5.9%	11.8%	0.0%	0.0%	5.9%	76.5%	94.1%		
5abcd - Brent	30	83.3%	10.0%	3.3%	0.0%	0.0%	0.0%	0.0%	3.3%	96.7%	96.7%		
26 - Owens	24	29.2%	33.3%	16.7%	16.7%	0.0%	0.0%	0.0%	4.2%	79.2%	95.8%		
95abcd - Fairchild	2	50.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	100.0%	100.0%		
Total/Average	119	35.3%	26.8%	15.9%	4.7%	4.4%	8.3%	0.6%	4.0%	86.4%	95.4%	80.48%	91.74%

Summer 2014	Enrollment	A	B	C	D	F	I	Drop	W	Success	Retention	Success	Retention
5B - Louie	18	50.0%	16.7%	11.1%	5.6%	0.0%		0.0%	16.7%	77.8%	83.3%		
Total/Average	18	50.0%	16.7%	11.1%	5.6%	0.0%		0.0%	16.7%	77.8%	83.3%	85.71%	90.38%

Page Average	116.13	40.8%	21.6%	13.1%	6.0%	5.6%	3.6%	1.9%	10.0%	76.7%	88.3%	79.48%	90.40%

Fall '10 to Summer '14 (summer not counted in enrollment average)

Appendix B

ACR/P Enrollment and Fill Rate

Fall 2010	Enrollment	Seat Count	Fill Rate
1A - Fairchild	17	15	113.33
1C - Fairchild	23	15	153.33
4abcd - Steele	19	26	73.08
5abcd - Rodriguez	33	26	126.92
20 - Owens	15	26	57.69
Total/Average	107	108	99.07

Spring 2011	Enrollment	Seat Count	Fill Rate
1A - Fairchild	16	15	106.67
1D - Fairchild	30	15	200.00
4abcd - Earlywine	28	26	107.69
5abcd - Rodriguez	28	26	107.69
24 - Owens	13	26	50.00
Total/Average	115	108	106.48

Fall 2011	Enrollment	Seat Count	Fill Rate
1A - Fairchild	15	15	100.00
2A - Fairchild	23	15	153.33
4abcd - Kooiman	30	26	115.38
5abcd - Rodriguez	26	26	100.00
26 - Owens	15	26	57.69
Total/Average	109	108	100.93

Spring 2012	Enrollment	Seat Count	Fill Rate
1A - Fairchild	18	15	120.00
1B - Fairchild	21	15	140.00
4abcd - Kooiman	28	26	107.69
5abcd - Rodriguez	20	26	76.92
22 - Owens	18	26	69.23
95abcd - Fairchild	1	1	100.00
Total/Average	106	109	97.25

Fall 2012	Enrollment	Seat Count	Fill Rate
1A - Fairchild	20	15	133.33
1C - Fairchild	28	15	186.67
4abcd - Kooiman	32	26	123.08
5abcd - Rodriguez	26	26	100.00
20 - Owens	24	26	92.31
95abcd - Fairchild	3	3	100.00
Total/Average	133	111	119.82

Spring 2013	Enrollment	Seat Count	Fill Rate
1A - Fairchild	20	15	133.33

1D - Fairchild	20	15	133.33
4abcd - Kooiman	32	26	123.08
5abcd - Rodriguez	23	26	88.46
22 - Owens	16	26	61.54
95abcd - Fairchild	2	2	100.00
Total/Average	113	110	102.73

Fall 2013	Enrollment	Seat Count	Fill Rate
1A - Fairchild	18	15	120.00
2B - Fairchild	24	15	160.00
4abcd - Rodriguez	19	26	73.08
5abcd - Kooiman	43	26	165.38
24 - Owens	21	26	80.77
95abcd - Fairchild	2	2	100.00
Total/Average	127	110	115.45

Spring 2014	Enrollment	Seat Count	Fill Rate
1A - Fairchild	19	15	126.67
2C - Fairchild	27	15	180.00
4abcd - Rodriguez	17	26	65.38
5abcd - Kooiman	30	26	115.38
26 - Owens	24	26	92.31
95abcd - Fairchild	2	2	100.00
Total/Average	119	110	108.18

Summer 2014	Enrollment	Seat Count	Fill Rate
5B - Louie	18	26	69.23
Total/Average	18	26	69.23

Page Average	105.22	100.00	102.13

INDUSTRY AND TECHNOLOGY
Institutional (ILO), Program (PLO), and Course (SLO) Alignment

Appendix C

Program: **Auto Collision Repair and Painting**	**Number of Courses:** 20	**Date Updated:** 09.18.2014	**Submitted by:** SueEllen Warren, ext. 4519 Renee Newell, ext. 3308

ILOs	**1. Critical Thinking** *Students apply critical, creative and analytical skills to identify and solve problems, analyze information, synthesize and evaluate ideas, and transform existing ideas into new forms.*	**2. Communication** *Students effectively communicate with and respond to varied audiences in written, spoken or signed, and artistic forms.*	**3. Community and Personal Development** *Students are productive and engaged members of society, demonstrating personal responsibility, and community and social awareness through their engagement in campus programs and services.*	**4. Information Literacy** *Students determine an information need and use various media and formats to develop a research strategy and locate, evaluate, document, and use information to accomplish a specific purpose. Students demonstrate an understanding of the legal, social, and ethical aspects related to information use.*

SLO-PLO-ILO ALIGNMENT NOTES:

Mark boxes with an 'X' if: SLO/PLO is a major focus or an important part of the course/program; direct instruction or some direct instruction is provided; students are evaluated multiple times (and possibly in various ways) throughout the course or are evaluated on the concepts once or twice within the course.

DO NOT mark with an 'X' if: SLO/PLO is a minor focus of the course/program and some instruction is given in the area but students are not formally evaluated on the concepts; or if the SLO/PLO is minimally or not at all part of the course/program.

PLOs	**PLO to ILO Alignment** *(Mark with an X)*			
	1	**2**	**3**	**4**
PLO #1 ASE Certification Tests Upon completion of this discipline's course of study, the student will be able pass at least one ASE certification test or practice test in Auto Collision Repair (B2, B3, B4, B5 or B6).	X			
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.	X			
PLO #3 Damage Repair Estimate Upon completion of this discipline's course of study, the student will be able to examine a damaged vehicle and create an informal written estimate of the parts, tools, materials and time needed to repair the vehicle.	X			

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 1A Introduction to Automotive Collision Repair: SLO #1 MIG Welds Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel in 'flat' position.		X					
ACRP 1A Introduction to Automotive Collision Repair: SLO #2 Mix & Spray Primer Students will be able to mix and spray a given quantity of primer using the correct ratio and adjust, operate, and clean an HVLP primer gun.	X			X			
ACRP 1A Introduction to Automotive Collision Repair: SLO #3 Mix, Apply & Shape Plastic Filler Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel.	X						
ACRP 1B Collision Repair Equipment and Welding Techniques: SLO #1 I-CAR MIG Welds Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards.		X					
ACRP 1B Collision Repair Equipment and Welding Techniques: SLO #2 Panel Misalignment Students will be able to identify panel misalignment due to improper installation, prior damage, and/or improper repair and choose the proper repair steps to correct the misalignment.			X	X			
ACRP 1B Collision Repair Equipment and Welding Techniques: SLO #3 Large Dent Removal Students will be able to use dent removal equipment such as the Maxi welder or stud welder to remove a large dent from an automotive panel with no rear access.	X						
ACRP 1C Major Collision Analysis and Repair: SLO #1 Measuring Vehicle Damage Students will be able to identity, differentiate between, and measure direct and indirect vehicle damage. Students will be able to use proper nomenclature to write an informal estimate of what vehicle parts will need to be repaired and what parts need to be replaced.			X				
ACRP 1C Major Collision Analysis and Repair: SLO #2 Types of Frame Damage Given access to a damaged vehicle, students will be able to recognize one or more of the five types of frame damage and will be able to create a written repair strategy to fix the damage.			X	X			
ACRP 1C Major Collision Analysis and Repair: SLO #3 Core Support Replacement Students will be able to create a repair plan for replacing a damaged unibody vehicle's core support that includes analysis of the damage, an ordered list of parts for removal, tools needed to remove the core support, and location and number of welds needed to install the new support.	X						

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 1D Automotive Component Systems Analysis and Repair: SLO #1 Plastic Repair Students will be able to locate a plastic part's type code and choose the appropriate repair method, tools, and materials. Students will then be able to apply the method and perform the repair.	X						
ACRP 1D Automotive Component Systems Analysis and Repair: SLO #2 Suspension Components Students will be able to identify damage to suspension components by measuring and visual inspection of a damaged vehicle. Students will be able to use proper nomenclature to write an informal estimate of what vehicle parts will need to be repaired and what parts need to be replaced.			X	X			
ACRP 1D Automotive Component Systems Analysis and Repair: SLO #3 Hybrid & Airbag Safety The student will be able to research, locate, safely disable and enable a hybrid vehicle's high voltage system. The student will also be able to research, safely disable and enable a vehicle's driver airbag.	X						
ACRP 20 Automotive Collision Investigation: SLO #1 Restraint Systems Students will be able to recognize, name, and diagnose damage to multiple types of occupant restraint systems including active restraints (seat belts) and passive restraints (automated seat belts, airbags).	X						
ACRP 20 Automotive Collision Investigation: SLO #2 Damage to Unitized and Full Frame Vehicles Students will be able to recognize, name, and diagnose damage to unitized and full-frame vehicles and some of their major systems (drivetrain, brakes, suspension/steering).			X	X			
ACRP 20 Automotive Collision Investigation: SLO #3 Tire Identification & Construction Students will be able to decode tire information such as wheel size, diameter, width, offset, production date, speed rating, traction rating, and temperature rating. Students will also be able to identify different types of tire construction (radial, bias ply) and identify tires by skid marks observed after an accident.			X				
ACRP 22 Automotive Repair Fraud: SLO #1 Examining Accident Scenes Students will be able to examine an accident scene (in person or via video/digital media) and formulate conclusions as to the details of the accident based on proper detection and investigation procedures and collection of evidence such as accident photography, witness marks and material transfer.			X				
ACRP 22 Automotive Repair Fraud: SLO #2 Staged Accidents Students will be able to analyze both an accident- or fire-damaged vehicle and the accident scene to determine if the accident was staged (fraudulent).			X	X			
ACRP 22 Automotive Repair Fraud: SLO #3 VIN Swapping and Title Issues Students will be able to recognize and locate Vehicle Identification Numbers (VIN) and determine if the VIN plate and/or labels have been altered, cloned, replaced or otherwise tampered with. Students will be able to explain how a vehicle title could be 'washed' and how to identify a washed title.			X				

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 24 Automotive Collision Analysis: SLO #1 Point of Impact and Secondary Damage Students will be able to analyze an accident-damaged vehicle, and from the collision deformation and damage to crush zones, determine the point of impact and identify secondary damage.			X	X			
ACRP 24 Automotive Collision Analysis: SLO #2 Speed Determination Students will be able to analyze an accident-damaged vehicle and formulate an impact hypothesis including 4-point and 6-point speed determination.			X				
ACRP 24 Automotive Collision Analysis: SLO #3 Accident Causation Factors Students will be able to use an Event Data Recorder (EDR) and vehicle/crash site observation to form a hypothesis explaining the cause of the accident and who is at fault.			X				
ACRP 26 Automotive Accident Reconstruction: SLO #1 Occupant Dynamics Students will be able to predict and evaluate vehicle occupant dynamics in given collision scenarios.			X	X			
ACRP 26 Automotive Accident Reconstruction: SLO #2 Photography and Computer Modeling Students will be able to properly document vehicle damage using photography and/or computer modeling software for analysis of accident dynamics.			X				
ACRP 26 Automotive Accident Reconstruction: SLO #3 Velocity & Force Students will be able to explain and determine a vehicle's Principle Direction of Force (PDOF), force line and Delta-V. Students will also be able to calculate combined velocities of multiple vehicles.			X				
ACRP 2A Basic Automotive Painting - Refinishing: SLO #1 Mixing Primer Students will be able to mix a given quantity of primer using the correct ratio and will be able to adjust, operate, and clean an HVLP primer gun.	X			X			
ACRP 2A Basic Automotive Painting - Refinishing: SLO #2 Panel Prep and Painting Students will be able to differentiate between full panel repairs, spot repairs, and blend panels and be able to prepare each for refinishing using the correct tools and procedures.	X						
ACRP 2A Basic Automotive Painting - Refinishing: SLO #3 Gun Cleaning & VOC Tracking Students will be able to thoroughly tear down a paint spray gun, clean all parts and surfaces using environmentally correct techniques and chemicals, and reassemble. Students will also be able to monitor the type and amount of liquid material used and record the data in the VOC (volatile organic compound) tracking log book.	X						

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 2B Automotive Refinishing Materials and Equipment: SLO #1 Chemicals and Additives Students will be able to analyze a given repair job and choose the correct chemicals and additives needed for the job based on weather conditions, job scope, job budget, and job deadline.	X						
ACRP 2B Automotive Refinishing Materials and Equipment: SLO #2 Spray Booth Operation Students will be able to set up, operate, and shut down a spray booth according to outside temperature and humidity, and the vehicle job and chemicals being sprayed.	X			X			
ACRP 2B Automotive Refinishing Materials and Equipment: SLO #3 Formula Lookup & Toner Pour Students will be able to retrieve a vehicle's color code and formula information, select the correct quantity for the job, and correctly pour the toners to create the paint.	X						
ACRP 2C Automotive Refinishing Applications: SLO #1 Color Matching and Spot Blends Students will be able to choose the proper color variant for color match and perform a spot blend on a repaired sample panel.	X						
ACRP 2C Automotive Refinishing Applications: SLO #2 Two-Tone Plastic Bumpers Students will be able to prepare and refinish a flexible two-tone plastic bumper using the correct chemicals and production shop procedures.	X			X			
ACRP 2C Automotive Refinishing Applications: SLO #3 Tri-Coat Letdown Panel Students will be able to differentiate between 2-stage and 3-stage color codes, obtain color formula information, pour toners to create basecoat and midcoat paints, and create a 5-step letdown panel to test the paint for color match to a sample chip.	X						
ACRP 4A Beginning Automotive Collision Repair I: SLO #1 Tool Identification & Use Students will be able to properly name tools unique to the collision repair trade and explain how they are used. Students will be able to analyze minor damage and select the correct hand tools to repair the damage.	X						
ACRP 4A Beginning Automotive Collision Repair I: SLO #2 Vehicle Parts & Construction Students will be able to identify and differentiate between unibody and full-frame vehicle designs. Students will be able to identify and properly name major non-structural vehicle parts and panels.			X	X			
ACRP 4A Beginning Automotive Collision Repair I: SLO #3 Mix, Apply & Shape Plastic Filler Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel.	X						

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 4B Beginning Automotive Collision Repair II: SLO #1 I-CAR MIG Welds Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards.		X					
ACRP 4B Beginning Automotive Collision Repair II: SLO #2 Large Dent Removal Students will be able to use dent removal equipment such as the Maxi welder or stud welder and Porto Power to remove a large dent from an automotive panel with no rear access.	X			X			
ACRP 4B Beginning Automotive Collision Repair II: SLO #3 Vehicle Disassembly Procedures Students will be able to read a damage estimate and systematically tear down a panel for repair and refinish according to the repairs required by the estimate. Students will also be able to properly store and label the removed parts for later reassembly.	X						
ACRP 4C [Course Name TBA]: SLO #1 Plastic Repair Students will be able to locate a plastic part's type code and choose the appropriate repair method, tools, and materials. Students will then be able to apply the method and perform the repair.	X						
ACRP 4C [Course Name TBA]: SLO #2 Panel Misalignment Students will be able to identify panel misalignment due to improper installation, prior damage, and/or improper repair and choose the proper repair steps to correct the misalignment.			X	X			
ACRP 4C [Course Name TBA]: SLO #3 Structural Parts Students will be able to locate and properly name major unibody vehicle structural parts and assemblies.			X				
ACRP 4D [Course Name TBA]: SLO #1 Porto Power Students will be able to set up and use a Porto Power hydraulic ram and its attachments to remove a large panel dent or correct damage to a structural part.	X						
ACRP 4D [Course Name TBA]: SLO #2 Pull Planning & Geometry Students will be able to analyze damage to a given vehicle, determine the sequence and direction of the impact's damage, and create a diagram and pull plan to correct the damage using the frame rack, Power Post or Pull Dozer.	X			X			
ACRP 4D [Course Name TBA]: SLO #3 Anchoring a Vehicle for Pulling Students will be able to research and locate a given vehicle's anchor points for frame pulling, and choose the correct grade of chains and type of attachment accessories to anchor the vehicle to the floor or frame rack.	X						

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 5A Beginning Automotive Painting I: SLO #1 VOC Tracking Students will be able to monitor the type and amount of liquid material used for a job and record the data in the VOC (volatile organic compound) tracking log book.	X						
ACRP 5A Beginning Automotive Painting I: SLO #2 Spray Gun Adjustment & Cleaning Students will be able to thoroughly tear down a paint spray gun, clean all parts and surfaces using environmentally correct techniques and chemicals, and reassemble.	X			X			
ACRP 5A Beginning Automotive Painting I: SLO #3 Mix & Spray Primer Students will be able to mix and spray a given quantity of primer using the correct ratio and a locally compliant primer gun.	X						
ACRP 5B Beginning Automotive Painting II: SLO #1 Surface Prep Students will be able to differentiate between and use the correct materials and techniques for preparing steel, aluminum, fiberglass, plastic, e-coat and existing paint for refinishing.	X						
ACRP 5B Beginning Automotive Painting II: SLO #2 Parts Painting Students will be able to clean a vehicle part or parts, mix paint according to the correct ratio and quantity needed, adjust their spray gun, and refinish the parts using locally compliant basecoat/clearcoat paints.	X			X			
ACRP 5B Beginning Automotive Painting II: SLO #3 Corrosion Protection Students will be able to identify surfaces and situations that require the application of corrosion protection on a vehicle. Students will also be able to analyze a surface and determine what kind of corrosion protection would best suit the vehicle.	X						
ACRP 5C [Course Name TBA]: SLO #1 Formula Lookup & Toner Pour Students will be able to retrieve a vehicle's color code and formula information, select the correct quantity for the job, and correctly pour the toners to create the paint.	X						
ACRP 5C [Course Name TBA]: SLO #2 Color Variants and Sprayout Cards Students will be able to locate a vehicle's color code (and plant of manufacture if needed), and select the correct variant from a sample deck. The student will create a sprayout card of their chosen color and evaluate the card for color match.	X			X			
ACRP 5C [Course Name TBA]: SLO #3 Paint Flaws & Corrections Students will be able to identify by name different types of paint flaws and their causes. Students will also be able to identify which flaws can be corrected in the spray booth while wet, which ones must be corrected after they have dried, and the correction tools and technique for each.	X						

SLOs	SLO to PLO Alignment *(Mark with an X)*			COURSE to ILO Alignment *(Mark with an X)*			
	P1	P2	P3	1	2	3	4
ACRP 5D [Course Name TBA]: SLO #1 Spray Booth Types & Equipment Students will be able to identify by name and differentiate between different kinds of paint spray booths and related equipment.	X						
ACRP 5D [Course Name TBA]: SLO #2 Chemicals & Additives Students will be able to choose the correct speed and type of chemical additives for a variety of different weather conditions, repair job size, and job turnaround time expectations.	X			X			
ACRP 5D [Course Name TBA]: SLO #3 Topcoat Paint Systems Students will be able to compare and contrast the three major types of topcoat paint systems for budget, speed of application, longevity, metallic layout, scratch resistance and ease of repair.	X						
ACRP 6 Automotive Collision Repair Applications: SLO #1 Setting Up and Using MIG Welder Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, spot, reinforced butt) according to I-CAR standards.		X					
ACRP 6 Automotive Collision Repair Applications: SLO #2 Repair Plan Students will be able to examine a damaged panel and formulate a repair plan that includes choosing the correct tools and abrasive grits for each step of the process from initial metalwork to preparing the panel for primer and refinish.			X	X			
ACRP 6 Automotive Collision Repair Applications: SLO #3 Spray Gun Adjustment & Cleaning Students will be able to thoroughly tear down a paint spray gun, clean all parts and surfaces using environmentally correct techniques and chemicals, and reassemble.	X						

COURSE SLO ASSESSMENT 4-YEAR TIMELINE REPORT (ECC)

Appendix D

INDUSTRY AND TECHNOLOGY DIVISION - AUTOMOTIVE COLLISION REPAIR / PAINTING

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2013-14 (Spring 2014)	ECC: ACRP 26	Automotive Accident Reconstruction	SLO #1 Occupant Dynamics	Students will be able to predict and evaluate vehicle occupant dynamics in given collision scenarios.
2013-14 (Spring 2014)	ECC: ACRP 26	Automotive Accident Reconstruction	SLO #2 Photography and Computer Modeling	Students will be able to properly document vehicle damage using photography and/or computer modeling software for analysis of accident dynamics.
2013-14 (Spring 2014)	ECC: ACRP 26	Automotive Accident Reconstruction	SLO #3 Velocity & Force	Students will be able to explain and determine a vehicle's Principle Direction of Force (PDOF), force line and Delta-V. Students will also be able to calculate combined velocities of multiple vehicles.
2014-15 (Fall 2014)	ECC: ACRP 1B	Collision Repair Equipment and Welding Techniques	SLO #1 I-CAR MIG Welds	Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards.
2014-15 (Fall 2014)	ECC: ACRP 1B	Collision Repair Equipment and Welding Techniques	SLO #2 Panel Misalignment	Students will be able to identify panel misalignment due to improper installation, prior damage, and/or improper repair and choose the proper repair steps to correct the misalignment.
2014-15 (Fall 2014)	ECC: ACRP 1B	Collision Repair Equipment and Welding Techniques	SLO #3 Large Dent Removal	Students will be able to use dent removal equipment such as the Maxi welder or stud welder to remove a large dent from an automotive panel with no rear access.
2014-15 (Fall 2014)	ECC: ACRP 20	Automotive Collision Investigation	SLO #1 Restraint Systems	Students will be able to recognize, name, and diagnose damage to multiple types of occupant restraint systems including active restraints (seat belts) and passive restraints (automated seat belts, airbags).
2014-15 (Fall 2014)	ECC: ACRP 20	Automotive Collision Investigation	SLO #2 Damage to Unitized and Full Frame Vehichles	Students will be able to recognize, name, and diagnose damage to unitized and full-frame vehicles and some of their major systems (drivetrain, brakes, suspension/steering).
2014-15 (Fall 2014)	ECC: ACRP 20	Automotive Collision Investigation	SLO #3 Tire Identification & Construction	Students will be able to decode tire information such as wheel size, diameter, width, offset, production date, speed rating, traction rating, and temperature rating. Students will also be able to identify different types of tire construction (radial, bias ply) and identify tires by skidmarks observed after an accident.
2014-15 (Fall 2014)	ECC: ACRP 4A	Beginning Automotice Collision Repair I	SLO #1 Tool Identification & Use	Students will be able to properly name tools unique to the collision repair trade and explain how they are used. Students will be able to analyze minor damage and select the correct hand tools to repair the damage.
2014-15 (Fall 2014)	ECC: ACRP 4A	Beginning Automotice Collision Repair I	SLO #2 Vehicle Parts & Construction	Students will be able to identify and differentiate between unibody and full-frame vehicle designs. Students will be able to identify and properly name major non-structural vehicle parts and panels.
2014-15 (Fall 2014)	ECC: ACRP 4A	Beginning Automotice Collision Repair I	SLO #3 Mix, Apply & Shape Plastic Filler	Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel.
2014-15 (Fall	ECC: ACRP 5A	Beginning Automotive Painting	SLO #1 VOC Tracking	Students will be able to monitor the type and amount of liquid

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2014)		I		material used for a job and record the data in the VOC (volatile organic compound) tracking log book.
2014-15 (Fall 2014)	ECC: ACRP 5A	Beginning Automotive Painting I	SLO #2 Spray Gun Adjustment & Cleaning	Students will be able to thoroughly tear down a paint spray gun, clean all parts and surfaces using environmentally correct techniques and chemicals, and reassemble.
2014-15 (Fall 2014)	ECC: ACRP 5A	Beginning Automotive Painting I	SLO #3 Mix & Spray Primer	Students will be able to mix and spray a given quantity of primer using the correct ratio and a locally compliant primer gun.
2014-15 (Spring 2015)	ECC: ACRP 1A	Introduction to Automotive Collision Repair	SLO #1 MIG Welds	Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel in 'flat' position.
2014-15 (Spring 2015)	ECC: ACRP 1A	Introduction to Automotive Collision Repair	SLO #2 Mix & Spray Primer	Students will be able to mix and spray a given quantity of primer using the correct ratio and adjust, operate, and clean an HVLP primer gun.
2014-15 (Spring 2015)	ECC: ACRP 1A	Introduction to Automotive Collision Repair	SLO #3 Mix, Apply & Shape Plastic Filler	Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel.
2014-15 (Spring 2015)	ECC: ACRP 1C	Major Collision Analysis and Repair	SLO #1 Measuring Vehicle Damage	Students will be able to identity, differentiate between, and measure direct and indirect vehicle damage. Students will be able to use proper nomenclature to write an informal estimate of what vehicle parts will need to be repaired and what parts need to be replaced.
2014-15 (Spring 2015)	ECC: ACRP 1C	Major Collision Analysis and Repair	SLO #2 Types of Frame Damage	Given access to a damaged vehicle, students will be able to recognize one or more of the five types of frame damage and will be able to create a written repair strategy to fix the damage.
2014-15 (Spring 2015)	ECC: ACRP 1C	Major Collision Analysis and Repair	SLO #3 Core Support Replacement	Students will be able to create a repair plan for replacing a damaged unibody vehicle’s core support that includes analysis of the damage, an ordered list of parts for removal, tools needed to remove the core support, and location and number of welds needed to install the new support.
2014-15 (Spring 2015)	ECC: ACRP 22	Automotive Repair Fraud	SLO #1 Examining Accident Scenes	Students will be able to examine an accident scene (in person or via video/digital media) and formulate conclusions as to the details of the accident based on proper detection and investigation procedures and collection of evidence such as accident photography, witness marks and material transfer.
2014-15 (Spring 2015)	ECC: ACRP 22	Automotive Repair Fraud	SLO #2 Staged Accidents	Students will be able to analyze both an accident- or fire-damaged vehicle and the accident scene to determine if the accident was staged (fraudulent).
2014-15 (Spring 2015)	ECC: ACRP 22	Automotive Repair Fraud	SLO #3 VIN Swapping and Title Issues	Students will be able to recognize and locate Vehicle Identification Numbers (VIN) and determine if the VIN plate and/or labels have been altered, cloned, replaced or otherwise tampered with. Students will be able to explain how a vehicle title could be ‘washed’ and how to identify a washed title.
2014-15 (Spring 2015)	ECC: ACRP 4B	Beginning Automotive Collision Repair II	SLO #1 I-CAR MIG Welds	Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards.

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2014-15 (Spring 2015)	ECC: ACRP 4B	Beginning Automotive Collision Repair II	SLO #2 Large Dent Removal	Students will be able to use dent removal equipment such as the Maxi welder or stud welder and Porto Power to remove a large dent from an automotive panel with no rear access.
2014-15 (Spring 2015)	ECC: ACRP 4B	Beginning Automotive Collision Repair II	SLO #3 Vehicle Disassembly	Procedures Students will be able to read a damage estimate and systematically tear down a panel for repair and refinish according to the repairs required by the estimate. Students will also be able to properly store and label the removed parts for later reassembly.
2014-15 (Spring 2015)	ECC: ACRP 5B	Beginning Automotive Painting II	SLO #1 Surface Prep	Students will be able to differentiate between and use the correct materials and techniques for preparing steel, aluminum, fiberglass, plastic, e-coat and existing paint for refinishing.
2014-15 (Spring 2015)	ECC: ACRP 5B	Beginning Automotive Painting II	SLO #2 Parts Painting	Students will be able to clean a vehicle part or parts, mix paint according to the correct ratio and quantity needed, adjust their spray gun, and refinish the parts using locally compliant basecoat/clearcoat paints.
2014-15 (Spring 2015)	ECC: ACRP 5B	Beginning Automotive Painting II	SLO #3 Corrosion Protection	Students will be able to identify surfaces and situations that require the application of corrosion protection on a vehicle. Students will also be
2015-16 (Fall 2015)	ECC: ACRP 24	Automotive Collision Analysis	SLO #1 Point of Impact and Secondary Damage	Students will be able to analyze an accident-damaged vehicle, and from the collision deformation and damage to crush zones, determine the point of impact and identify secondary damage.
2015-16 (Fall 2015)	ECC: ACRP 24	Automotive Collision Analysis	SLO #2 Speed Determination	Students will be able to analyze an accident-damaged vehicle and formulate an impact hypothesis including 4-point and 6-point speed determination.
2015-16 (Fall 2015)	ECC: ACRP 24	Automotive Collision Analysis	SLO #3 Accident Causation Factors	Students will be able to use an Event Data Recorder (EDR) and vehicle/crash site observation to form a hypothesis explaining the cause of the accident and who is at fault.
2015-16 (Fall 2015)	ECC: ACRP 2A	Basic Automotive Painting - Refinishing	SLO #1 Mixing Primer	Students will be able to mix a given quantity of primer using the correct ratio and will be able to adjust, operate, and clean an HVLP primer gun.
2015-16 (Fall 2015)	ECC: ACRP 2A	Basic Automotive Painting - Refinishing	SLO #2 Panel Prep and Painting	Students will be able to differentiate between full panel repairs, spot repairs, and blend panels and be able to prepare each for refinishing using the correct tools and procedures.
2015-16 (Fall 2015)	ECC: ACRP 2A	Basic Automotive Painting - Refinishing	SLO #3 Gun Cleaning & VOC Tracking	Students will be able to thoroughly tear down a paint spray gun, clean all parts and surfaces using environmentally correct techniques and chemicals, and reassemble. Students will also be able to monitor the type and amount of liquid material used and record the data in the VOC (volatile organic compound) tracking log book.
2015-16 (Fall 2015)	ECC: ACRP 4C	Course Name TBA	SLO #1 Plastic Repair	Students will be able to locate a plastic part's type code and choose the appropriate repair method, tools, and materials. Students will then be able to apply the method and perform the repair
2015-16 (Fall 2015)	ECC: ACRP 4C	Course Name TBA	SLO #2 Panel Misalignment	Students will be able to identify panel misalignment due to improper installation, prior damage, and/or improper repair and choose the proper repair steps to correct the misalignment.

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2015-16 (Fall 2015)	ECC: ACRP 4C	Course Name TBA	SLO #3 Structural Parts	Students will be able to locate and properly name major unibody vehicle structural parts and assemblies
2015-16 (Fall 2015)	ECC: ACRP 5C	Course Name TBA	SLO #1 Formula Lookup & Toner Pour	Students will be able to retrieve a vehicle's color code and formula information, select the correct quantity for the job, and correctly pour the toners to create the paint.
2015-16 (Fall 2015)	ECC: ACRP 5C	Course Name TBA	SLO #2 Color Variants and Sprayout Cards	Students will be able to locate a vehicle's color code (and plant of manufacture if needed), and select the correct variant from a sample deck. The student will create a sprayout card of their chosen color and evaluate the card for color match.
2015-16 (Fall 2015)	ECC: ACRP 5C	Course Name TBA	SLO #3 Paint Flaws & Corrections	Students will be able to identify by name different types of paint flaws and their causes. Students will also be able to identify which flaws can be corrected in the spray booth while wet, which ones must be corrected after they have dried, and the correction tools and technique for each.
2015-16 (Spring 2016)	ECC: ACRP 26	Automotive Accident Reconstruction	SLO #1 Occupant Dynamics	Students will be able to predict and evaluate vehicle occupant dynamics in given collision scenarios.
2015-16 (Spring 2016)	ECC: ACRP 26	Automotive Accident Reconstruction	SLO #2 Photography and Computer Modeling	Students will be able to properly document vehicle damage using photography and/or computer modeling software for analysis of accident dynamics.
2015-16 (Spring 2016)	ECC: ACRP 26	Automotive Accident Reconstruction	SLO #3 Velocity & Force	Students will be able to explain and determine a vehicle's Principle Direction of Force (PDOF), force line and Delta-V. Students will also be able to calculate combined velocities of multiple vehicles.
2015-16 (Spring 2016)	ECC: ACRP 2B	Automotive Refinishing Materials and Equipment	SLO #1 Chemicals and Additives	Students will be able to analyze a given repair job and choose the correct chemicals and additives needed for the job based on weather conditions, job scope, job budget, and job deadline.
2015-16 (Spring 2016)	ECC: ACRP 2B	Automotive Refinishing Materials and Equipment	SLO #2 Spray Booth Operation	Students will be able to set up, operate, and shut down a spray booth according to outside temperature and humidity, and the vehicle job and chemicals being sprayed.
2015-16 (Spring 2016)	ECC: ACRP 2B	Automotive Refinishing Materials and Equipment	SLO #3 Formula Lookup & Toner Pour	Students will be able to retrieve a vehicle's color code and formula information, select the correct quantity for the job, and correctly pour the toners to create the paint.
2015-16 (Spring 2016)	ECC: ACRP 4D	Course Name TBA	SLO #1 Porto Power	Students will be able to set up and use a Porto Power hydraulic ram and its attachments to remove a large panel dent or correct damage to a structural part.
2015-16 (Spring 2016)	ECC: ACRP 4D	Course Name TBA	SLO #2 Pull Planning & Geometry	Students will be able to analyze damage to a given vehicle, determine the sequence and direction of the impact's damage, and create a diagram and pull plan to correct the damage using the frame rack, Power Post or Pull Dozer.
2015-16 (Spring 2016)	ECC: ACRP 4D	Course Name TBA	SLO #3 Anchoring a Vehicle for Pulling	Students will be able to research and locate a given vehicle's anchor points for frame pulling, and choose the correct grade of chains and type of attachment accessories to anchor the vehicle to the floor or frame rack.

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2015-16 (Spring 2016)	ECC: ACRP 5D	Course Name TBA	SLO #1 Spray Booth Types & Equipment	Students will be able to identify by name and differentiate between different kinds of paint spray booths and related equipment.
2015-16 (Spring 2016)	ECC: ACRP 5D	Course Name TBA	SLO #2 Chemicals & Additives	Students will be able to choose the correct speed and type of chemical additives for a variety of different weather conditions, repair job size, and job turnaround time expectations.
2015-16 (Spring 2016)	ECC: ACRP 5D	Course Name TBA	SLO #3 Topcoat Paint Systems	Students will be able to compare and contrast the three major types of topcoat paint systems for budget, speed of application, longevity, metallic layout, scratch resistance and ease of repair.
2016-17 (Fall 2016)	ECC: ACRP 20	Automotive Collision Investigation	SLO #1 Restraint Systems	Students will be able to recognize, name, and diagnose damage to multiple types of occupant restraint systems including active restraints (seat belts) and passive restraints (automated seat belts, airbags).
2016-17 (Fall 2016)	ECC: ACRP 20	Automotive Collision Investigation	SLO #2 Damage to Unitized and Full Frame Vehichles	Students will be able to recognize, name, and diagnose damage to unitized and full-frame vehicles and some of their major systems (drivetrain, brakes, suspension/steering).
2016-17 (Fall 2016)	ECC: ACRP 20	Automotive Collision Investigation	SLO #3 Tire Identification & Construction	Students will be able to decode tire information such as wheel size, diameter, width, offset, production date, speed rating, traction rating, and temperature rating. Students will also be able to identify different types of tire construction (radial, bias ply) and identify tires by skidmarks observed after an accident.
2016-17 (Fall 2016)	ECC: ACRP 2C	Automotive Refinishing Applications	SLO #1 Color Matching and Spot Blends	Students will be able to choose the proper color variant for color match and perform a spot blend on a repaired sample panel.
2016-17 (Fall 2016)	ECC: ACRP 2C	Automotive Refinishing Applications	SLO #2 Two-Tone Plastic Bumpers	Students will be able to prepare and refinish a flexible two-tone plastic bumper using the correct chemicals and production shop procedures.
2016-17 (Fall 2016)	ECC: ACRP 2C	Automotive Refinishing Applications	SLO #3 Tri-Coat Letdown Panel	Students will be able to differentiate between 2-stage and 3-stage color codes, obtain color formula information, pour toners to create basecoat and midcoat paints, and create a 5-step letdown panel to test the paint for color match to a sample chip.
2016-17 (Fall 2016)	ECC: ACRP 4A	Beginning Automotice Collision Repair I	SLO #1 Tool Identification & Use	Students will be able to properly name tools unique to the collision repair trade and explain how they are used. Students will be able to analyze minor damage and select the correct hand tools to repair the damage.
2016-17 (Fall 2016)	ECC: ACRP 4A	Beginning Automotice Collision Repair I	SLO #2 Vehicle Parts & Construction	Students will be able to identify and differentiate between unibody and full-frame vehicle designs. Students will be able to identify and properly name major non-structural vehicle parts and panels.
2016-17 (Fall 2016)	ECC: ACRP 4A	Beginning Automotice Collision Repair I	SLO #3 Mix, Apply & Shape Plastic Filler	Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel.
2016-17 (Fall 2016)	ECC: ACRP 5A	Beginning Automotive Painting I	SLO #1 VOC Tracking	Students will be able to monitor the type and amount of liquid material used for a job and record the data in the VOC (volatile organic compound) tracking log book.
2016-17 (Fall	ECC: ACRP 5A	Beginning Automotive Painting	SLO #2 Spray Gun Adjustment &	Students will be able to thoroughly tear down a paint spray gun, clean

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2016)		I	Cleaning	all parts and surfaces using environmentally correct techniques and chemicals, and reassemble.
2016-17 (Fall 2016)	ECC: ACRP 5A	Beginning Automotive Painting I	SLO #3 Mix & Spray Primer	Students will be able to mix and spray a given quantity of primer using the correct ratio and a locally compliant primer gun.
2016-17 (Spring 2017)	ECC: ACRP 1A	Introduction to Automotive Collision Repair	SLO #1 MIG Welds	Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel in 'flat' position.
2016-17 (Spring 2017)	ECC: ACRP 1A	Introduction to Automotive Collision Repair	SLO #2 Mix & Spray Primer	Students will be able to mix and spray a given quantity of primer using the correct ratio and adjust, operate, and clean an HVLP primer gun.
2016-17 (Spring 2017)	ECC: ACRP 1A	Introduction to Automotive Collision Repair	SLO #3 Mix, Apply & Shape Plastic Filler	Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel.
2016-17 (Spring 2017)	ECC: ACRP 1D	Automotive Component Systems Analysis and Repair	SLO #1 Plastic Repair	Students will be able to locate a plastic part's type code and choose the appropriate repair method, tools, and materials. Students will then be able to apply the method and perform the repair
2016-17 (Spring 2017)	ECC: ACRP 1D	Automotive Component Systems Analysis and Repair	SLO #2 Suspension Components	Students will be able to identify damage to suspension components by measuring and visual inspection of a damaged vehicle. Students will be able to use proper nomenclature to write an informal estimate of what vehicle parts will need to be repaired and what parts need to be replaced.
2016-17 (Spring 2017)	ECC: ACRP 1D	Automotive Component Systems Analysis and Repair	SLO #3 Hybrid & Airbag Safety	The student will be able to research, locate, safely disable and enable a hybrid vehicle’s high voltage system. The student will also be able to research, safely disable and enable a vehicle’s driver airbag.
2016-17 (Spring 2017)	ECC: ACRP 22	Automotive Repair Fraud	SLO #1 Examining Accident Scenes	Students will be able to examine an accident scene (in person or via video/digital media) and formulate conclusions as to the details of the accident based on proper detection and investigation procedures and collection of evidence such as accident photography, witness marks and material transfer.
2016-17 (Spring 2017)	ECC: ACRP 22	Automotive Repair Fraud	SLO #2 Staged Accidents	Students will be able to analyze both an accident- or fire-damaged vehicle and the accident scene to determine if the accident was staged (fraudulent).
2016-17 (Spring 2017)	ECC: ACRP 22	Automotive Repair Fraud	SLO #3 VIN Swapping and Title Issues	Students will be able to recognize and locate Vehicle Identification Numbers (VIN) and determine if the VIN plate and/or labels have been altered, cloned, replaced or otherwise tampered with. Students will be able to explain how a vehicle title could be ‘washed’ and how to identify a washed title.
2016-17 (Spring 2017)	ECC: ACRP 4B	Beginning Automotive Collision Repair II	SLO #1 I-CAR MIG Welds	Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards.
2016-17 (Spring 2017)	ECC: ACRP 4B	Beginning Automotive Collision Repair II	SLO #2 Large Dent Removal	Students will be able to use dent removal equipment such as the Maxi welder or stud welder and Porto Power to remove a large dent from an automotive panel with no rear access.

Course SLO Assessment Cycle	Course ID	Course Name	Course SLO Title	Course SLO Statement
2016-17 (Spring 2017)	ECC: ACRP 4B	Beginning Automotive Collision Repair II	SLO #3 Vehicle Disassembly	Procedures Students will be able to read a damage estimate and systematically tear down a panel for repair and refinish according to the repairs required by the estimate. Students will also be able to properly store and label the removed parts for later reassembly.
2016-17 (Spring 2017)	ECC: ACRP 5B	Beginning Automotive Painting II	SLO #1 Surface Prep	Students will be able to differentiate between and use the correct materials and techniques for preparing steel, aluminum, fiberglass, plastic, e-coat and existing paint for refinishing.
2016-17 (Spring 2017)	ECC: ACRP 5B	Beginning Automotive Painting II	SLO #2 Parts Painting	Students will be able to clean a vehicle part or parts, mix paint according to the correct ratio and quantity needed, adjust their spray gun, and refinish the parts using locally compliant basecoat/clearcoat paints.
2016-17 (Spring 2017)	ECC: ACRP 5B	Beginning Automotive Painting II	SLO #3 Corrosion Protection	Students will be able to identify surfaces and situations that require the application of corrosion protection on a vehicle. Students will also be
2017-18 (Fall 2017)	ECC: ACRP 24	Automotive Collision Analysis	SLO #1 Point of Impact and Secondary Damage	Students will be able to analyze an accident-damaged vehicle, and from the collision deformation and damage to crush zones, determine the point of impact and identify secondary damage.
2017-18 (Fall 2017)	ECC: ACRP 24	Automotive Collision Analysis	SLO #2 Speed Determination	Students will be able to analyze an accident-damaged vehicle and formulate an impact hypothesis including 4-point and 6-point speed determination.
2017-18 (Fall 2017)	ECC: ACRP 24	Automotive Collision Analysis	SLO #3 Accident Causation Factors	Students will be able to use an Event Data Recorder (EDR) and vehicle/crash site observation to form a hypothesis explaining the cause of the accident and who is at fault.

Assessment: Course Four Column

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

ECC: ACRP 1A:Introduction to Automotive Collision Repair

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #1 MIG Welds - Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel in 'flat' position. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2014-15 (Spring 2015), 2016-17 (Spring 2017) **Input Date:** 11/29/2013	**Presentation/Skill Demonstration -** Students are provided access to a MIG welder, welding helmet, locking pliers, metal practice coupons, and other tools/safety gear relevant to MIG welding. Students must set up the welder, tune its settings, practice and complete an example of each weld. Students will present their best one of each to the instructor for a strength test. **Standard and Target for Success:** The strength test for 1A student welds involves the student or instructor dropping the welded coupons one at a time onto the cement floor from shoulder height. If the weld does not break, it passes the strength test. Although not a true test of adequate strength for use in automotive repair, it is challenging for beginning students. It is expected that 100% of students will pass this strength test for all three welds.	**Semester and Year Assessment Conducted:** 2014-15 (Spring 2015) **Standard Met? :** Standard Not Met 23 students participated in this assessment. All students created passing butt welds. 22/23 students, or 95.65%, created passing lap welds (one did not turn in this weld) and 22/23 students, 95.65%, created passing plug welds (a different student did not turn in this weld). I am pleased with these results even though we did not reach our goal of 100% because all students who turned in welds did pass the strength test. This semester, we began teaching in our new building. We no longer have oxygen/acetylene welders for everyone so we began to phase out this outdated technology even though the related concepts of welding safety, heat control, creating a weld bead, weld penetration/strength, panel warp, and following a setup/shutdown procedure are still relevant topics that also apply to MIG welding. Usually students begin with the 'scary' oxy/acetylene torches (3 welds) and graduate to MIG (3 more welds). This semester, I started the students with MIG (3 welds) and then introduced them to oxy/acetylene and asked them to create one good weld with it. I was worried that I was not covering the concepts listed above thoroughly, but with the help of one student who had taken welding classes before, we were able to train and coach everyone. 21/23 created successful oxy/acetylene welds, two did not turn in this	**null.courseAction:** Due to the move, only 2-3 MIG welders were available for use by 23 students. For the next assessment, all 5 welders must be operational (full argon tanks and 220v power available) during student training and practice. It is recommended ACRP obtain 3-4 more 110v MIG welders to accommodate students during welding training and for use throughout the semester. (09/10/2015) **Action Category:** Program/College Support **null.courseFollowUp:** 220v power is now available at 4 sockets in the ACRP lab. Unfortunately the fabrication area in the yard where 1A welding training is held still has the wrong format of socket as mentioned in multiple New Building Fix emails to administration. According to the workers who corrected the other plugs, no plans exist to change out the remaining plugs.

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
		type of weld. (01/26/2015) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild	(05/08/2015)
		Semester and Year Assessment Conducted: 2014-15 (Fall 2014) **Standard Met? :** Standard Not Met 18 students were enrolled at the time of the assessment, 15 participated. Of the 15, 11 students created passing welds in all three categories. The remaining four did not turn in a complete set of MIG welds. All welds turned in passed the strength test. Technically, the 100% standard was not met, but I am confident that if all students had turned in welds, all would have passed. The students were taught two types of welding during the first week of class: oxygen/acetylene (torch) welding and then MIG (electric) welding. The students spent 2.5 days (about 10 hours) learning and practicing MIG welding to create the welds they turned in. They had no trouble setting up the metal coupons with clamps, punching holes, or adjusting the safety equipment. Adjusting the welder took a bit more practice - about 80% of students correctly answered a midterm question about using the chart inside the welder to find the correct welder settings for the gas, wire and metal thickness indicated. (12/07/2014) **Faculty Assessment Leader:** Patricia Fairchild **Faculty Contributing to Assessment:** Patricia Fairchild	**null.courseAction:** For the next assessment, I intend to use the I-CAR strength test instead of the drop test described here. I think the students can handle it and they get the benefit of learning how to use metal hammers and bench vises. The I-CAR test involves folding the butt welded plates back like closing a book and hammering the weld until it breaks. The lap weld is placed in a vice and bent back and forth until the coupons break apart. For the plug weld, the coupons are bent 90 degrees for strength and the coupons are spun until the weld breaks. In all three cases, broken metal indicates a passing weld, a broken weld indicates a failure. (01/31/2015) **Action Category:** Teaching Strategies
SLO #2 Mix & Spray Primer - Students will be able to mix and spray a given quantity of primer using the correct ratio and adjust, operate, and clean an HVLP primer gun.	**Presentation/Skill Demonstration -** Data for this assessment will be gathered during three different class assignments. The first involves students using the primer's Product	**Semester and Year Assessment Conducted:** 2014-15 (Spring 2015) **Standard Met? :** Standard Met 23 students participated in this assessment. We achieved 100% success in all three areas of testing. 100% of students	**null.courseAction:** Do not use alkyd primer for panels again. When applied too thick it doesn't dry. Use urethane or polyester primer instead. Make sure

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
Course SLO Status: Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2014-15 (Spring 2015), 2017-18 (Spring 2018) **Input Date:** 11/29/2013	Sheet (P-sheet) to research the primer's mixing ratio for hardener and reducer. The student must then pour a proper mix and quantity of 'primer', 'hardener' and 'reducer' (water and food coloring) into a paint mixing cup. The second assignment is for the student to prepare and prime a sample panel. This will be done as a class and the students will pass a spray gun around so each student can apply multiple layers of primer to his panel. The third assignment is for each student to receive a maladjusted spray gun loaded with paint or primer and for the student to adjust the gun's air pressure, fluid delivery and fan pattern into an acceptable oblong spray pattern on masking paper. The student must then demonstrate a 50% overlap to see if his fluid settings will keep up with or overpower his gun travel speed. Afterward, the student must disassemble, clean and reassemble the spray gun. **Standard and Target for Success:** The target for success is for 90% of students to successfully complete all three assignments. The tasks are set up as pass/fail. Either a student can complete the task or he cannot. Number of tries to adjust the gun and quality of the primed panel will not be taken into account at this beginning class level.	(23/23) were able to correctly mix the simulated primer, hardener and reducer in a 4:1:1 ratio. 100% of students (22 participated out of 23, one student absent who did not make up the assignment) were able to apply multiple coats of primer to their panels using a spray gun with good overlap technique and travel speed. 100% of students (22/22 - one student had dropped the class due to a work schedule change) were able to correctly achieve a proper oblong spray pattern. Although the tasks were not graded for quality, the majority of these beginning students produced quality results. This was a particularly 'on' group - almost no one dropped, participation was excellent, and student-to-student bonding did not create distracted groups as usual. They kept each other focused on the tasks and encouraged each other's successes. I am proud of this group and hope their transition into 'sophomores' next semester does not break down their focus and attention to coursework. (05/08/2015) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild	toolroom provides this. (10/01/2015) **Action Category:** Program/College Support
		Semester and Year Assessment Conducted: 2014-15 (Fall 2014) **Standard Met? :** Standard Met 15 students were enrolled at the time of the assessments. Part 1: 10 students volunteered to take their turn pouring 'chemicals' into a paint mixing cup and all poured the mix correctly. 2 students were absent, 3 did not participate. Students were intimidated by the graduated mixing cups when first presented them, but after lecture and hands-on practice with the colored water, all students felt confident they understood and could do it again on their own. Part 2: All 15 students correctly applied primer with 50% overlap and proper flash time to their prepped panel using a spray gun handed to them. All but 3 had never used a spray gun before. Part 3: 14 of 15 students were able to correctly adjust the gun settings. One student was absent and did not make up	**null.courseAction:** Provide gun cleaning kits for checkout in toolroom and/or provide cleaning brushes on strings or wires in gun cleaning room. Previous attempts to leave untethered brushes in the cleaning room did not work - the brushes disappeared. Cost per kit varies between $10-50 with no significant difference in quality. I recommend 10 kits be purchased - 8 for toolroom checkout, 2 for use in cleaning room. (01/30/2015) **Action Category:** Program/College Support

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
		the assignment. The students who had the most trouble were the ones who merely nudged the knobs. A nudge does not produce a noticeable change in spray and they were misled by differences in their gun-to-surface distance and speed of travel. Those who risked finding the limits of the knobs easily dialed in the settings. On purpose, I did not tell the students to push the gun adjustment boundaries, I only explained and demonstrated the function of the knobs and pointed out the telltale signs of a proper spray pattern. I am pleased with the students' problem-solving exploration and positive results. Part 4: Students were weakest with gun cleaning. All students were able to disassemble and reassemble a empty gun's parts, and all were able to identify a 'dirty' gun when someone else had left the gun imperfectly clean, but when they later used the guns for painting or primer, they did not clean them properly at all. They merely rinsed them out without disassembly. I blame the lack of gun cleaning tools and supplies in our thinner room and the fact that the students did not have to spend their own money to purchase the guns they used. I believe the majority of students would take better care of tools they had to save up to purchase. (12/07/2014) **Faculty Assessment Leader:** Patricia Fairchild **Faculty Contributing to Assessment:** Patricia Fairchild	
SLO #3 Mix, Apply & Shape Plastic Filler - Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2015-16 (Spring 2016), 2017-18 (Spring 2018) **Input Date:** 11/29/2013	**Presentation/Skill Demonstration -** Students will be asked to obtain and repair a damaged fender using hammer and dolly dent removal techniques, grinding and plastic filling techniques, and sanding techniques in preparation for primer. Students will be challenged to obtain their fenders for free at local repair shops, giving them a reason to introduce themselves to potential employers and see a repair	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Met 14 students turned in fenders for grading. All but one completed all five parts of the assignment and 6 took the non-required next step of applying primer with the intention of taking the fender through to painted completion. Part 1: 13 pass, one no-pass. 13 of 14 students did a great job with hammer and dolly to rough out the dents, requiring only within-spec filler thickness. The 14th student did not apply filler. The majority of student time was spent	**null.courseAction:** Provide one large serving of filler sufficient for the task to each student instead of multiple small servings. Students complained that the toolroom attendant did not give them enough filler at a time to apply the filler in one coat as is necessary for an efficient repair. The attendant expressed concern that the filler would be wasted because the students would mix in

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
	shop in action. Students will then evaluate and analyze the damage, determine the tools and repair methods needed, remove the dents, grind the paint, mix and apply plastic filler, then choose the tools and abrasives needed to shape and smooth the filler for primer, just like a collision repair technician would do in order to pass the part on to the paint/primer department at a repair shop. The repair area should be approximately 9"x12" and must include at least one body line. **Standard and Target for Success:** Student success will be separated into three categories: Pass, Almost Pass, and No Pass. The target for success is 80% of students will Pass or Almost Pass. Passing student fenders will (1) have a filler thickness within ASE specifications (maximum depth: 3/16"), (2) will have contours and body lines restored to pre-accident condition, and (3) filler will be sanded to 150-180 grit with (4) no pinholes or scratches in the filler. The area surrounding the repair will be (5) sanded with a dual-action sander and 220 grit sandpaper. Almost Passing fenders will pass four of the five conditions for success above. No-Pass fenders will meet 3 or fewer of the five conditions above.	on hammer and dolly, which is ideal for a quality repair. Part 2: 13 pass, one no-pass. 13 of 14 students adequately restored contours and body lines to pre-accident condition. The 14th student did not apply filler. Part 3: 13 pass, one no-pass. 13 of 14 students correctly used all 3 sandpaper grits (36, 80, 150) to shape the filler. The 14th student did not apply filler. Part 4: 10 pass, 3 almost pass, one no-pass. 10 of 14 students did not leave pinholes or coarse grit scratches in the filler. 2 students left some minimal (80 grit) scratches, one left a few significant (36 grit) scratches, one did not apply filler. Part 5: 14 pass. 13 of 14 students correctly featheredged the repair area with 220 grit on DA sander. One student did not get to this point on his fender project, but did use the DA with 220 correctly on his project car. (12/07/2014) **Faculty Assessment Leader:** Patricia Fairchild **Faculty Contributing to Assessment:** Patricia Fairchild	too much hardener or not apply the filler quickly enough to get it on the fender and shaped before it hardened up. Both sides have a point, but filler is cheap, about $20-30/gallon, and the correct amount of hardener is already given by the attendant to prevent overcatalyzation. A compromise would be to have students fix multiple small dents instead of one larger area, but then students would not have the same sense of satisfaction and pride of 'resurrecting' a fender that is such a confidence builder in beginners. I suggest each student be given a large quantity, and if more is needed, the student should purchase a second quantity. (02/27/2015) **Action Category:** Program/College Support

ECC: ACRP 1B:Collision Repair Equipment and Welding Techniques

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #1 I-CAR MIG Welds - Students will be able to set up and use a MIG welder properly and safely to perform three welds (lap, plug, reinforced butt) on automotive gauge steel according to I-CAR standards. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2017-18 (Fall 2017) **Input Date:** 11/29/2013	**Performance -** Students will perform each of the three welds in Flat and Vertical position to I-CAR measurement specifications. Students will be able to practice beforehand and will be able to adjust the welder and make one practice weld before they test. The students will get only one chance to make their test welds during the test. **Standard and Target for Success:** Each weld will be given a grade of Pass (all specs met), Almost Pass (one dimension out-of-spec) and No-Pass (more than one dimension out-of-spec). Students will be tested at the beginning and end of the semester. It is expected that 85% of students will show improvement or repeat an all-pass score over the course of the semester.	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Met See attached document for data tables. 29 students completed the first test, 24 completed the second, 5 students dropped or were withdrawn from the class. Over 95% of students showed improvement. In the first test, the majority of students performed No-Pass welds in all categories except flat plug welds (majority rated Almost Pass). Only a few (2-4) Passing welds were completed in the other five categories. The best weld results came from a student that turned in 4 passing and two almost-passing welds. In the second test, the results had improved so much that the data table seemed to be flipped upside down - the average number of no-pass welds had dropped to 3.3. The number of Pass and Almost Pass scores were about even, but every student but one had shown improvement. The only student that didn't improve was the high-scoring student from the first test who slipped to 4 passing, one almost passing and one non-passing weld. I contribute 3 factors to the success and improvement of the second test results. First, the students were more familiar with the rules and dimensions specifications the second time around. Second, all welders worked properly for the second test while during the first test one welder should have been taken out of service- it was low on shielding gas which was distracting to student confidence. Third, the most obvious, students had a whole semester to practice their welds on multiple class projects. (12/07/2014) **Faculty Assessment Leader:** Patricia Fairchild **Faculty Contributing to Assessment:** Patricia Fairchild **Related Documents:** ACRP 1B.1 assessment data - 14 fall.docx	**null.courseAction:** To prevent cheating and distractions, each student should be given just enough coupons, stamped with his initials, to complete the test. I thought that waiting in line would be less boring if the students punched and stamped their own coupons, but too many coupons were nearly illegible during grading, and some students took too many and used the extras for 'practice' during the test which was forbidden. (12/01/2017) **Action Category:** Teaching Strategies **null.courseAction:** For the next assessment, be sure all welders have enough gas and wire to get through the test, and explain the rules of the test and go over I-CAR specs more thoroughly before the students are allowed to leave their chairs. Once they are 'set free' they are so preoccupied with getting their metal coupons and being first in line that they don't listen to directions. (12/01/2017) **Action Category:** Teaching Strategies

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
SLO #2 Panel Misalignment - Students will be able to identify panel misalignment due to improper installation, prior damage, and/or improper repair and choose the proper repair steps to correct the misalignment. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2017-18 (Fall 2017) **Input Date:** 11/29/2013	**Exam/Test/Quiz -** Students will be given a quiz or group of embedded questions to assess two different bolt-on panel misalignment situations. Students must identify the cause of the misalignment and the correct repair/alignment procedure for each situation. **Standard and Target for Success:** It is expected that 90% of students will be able to identify the cause of the misalignment and that 75% of students will be able to recommend the correct repair/alignment procedure.	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Not Met Students were given two embedded ASE-style test questions in typical Technician A/Technician B format (the student must choose if one, both or neither technician's statement is correct). The questions were given with diagrams showing misalignment to a hood and a door. The students had to visualize the scenarios, problem-solve what happened during the repair to create the misalignment, and what should have been done (or what must be done now) to correct the misalignment. 65% of students got the first question correct (15/23). This question read: "A car has had the front sheet metal replaced. The fender-to-door gap is wider on the passenger side than the on the driver side and the hood appears as shown (rear edge of hood aligns with cowl). Technician A says that only the hood latch is misaligned. Technician B says the front structure of the vehicle is not dimensionally correct. Who is right?" The answer is B because a hood latch problem would suggest the fenders and core support are correct and the hood is wrong. Most students could figure out that if this were so, the rear edge of the definitely-not-rhomboid hood couldn't possibly align. The diagram shows the hood correctly aligning at the back and indicating a condition called 'side sway' in the fenders and core support. This topic and the supporting troubleshooting techniques were presented during lecture with emphasis on the fact that the hood will never 'stretch' diagonally without obvious visual signs of damage. Students were instructed to not be fooled by blaming a panel when the whole vehicle could be off. Most of them remembered, but not enough. I will have to make an effort to cover this phenomenon more thoroughly. Students had more difficulty with the 2nd question: only 43% (10/23) got the question correct. The question was "The car shown (side view of front door with some surrounding indication of windshield, roof, fender and rear	**null.courseAction:** I will have to add 'shims' to my lectures, even though the temptation to use them on modern cars when they shouldn't is a temptation students don't need. I will therefore have to include reminders about safe and proper repairs as well as liability for incorrect repairs. (12/01/2017) **Action Category:** Teaching Strategies

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
		door. Arrows point to 'excessive gap' at front edge) has adjustable hinges. Technician A says the gap can be adjusted by repositioning the hinges. Technician B says the gap can be adjusted by shimming the hinges. Who is right?" This was confusing to most students because modern cars do not use shims. Cars today are engineered more precisely than older vehicles, so many students have never seen shims before. Students were also confused because they had to visualize a hinge through the closed door when they are used to seeing hinges open when the door is open. Only by imagining the door as transparent, it is easy to understand that putting shims between the door hinge and car body will move it outward toward the viewer, not forward to correct the misalignment. Loosening the hinge bolts and repositioning the hinges sideways will correct the misalignment; technician A is correct. I will have to add 'shims' to my lectures, even though the temptation to use them on modern cars when they shouldn't is a temptation students don't need. I will therefore have to include reminders about safe and proper repairs as well as liability for incorrect repairs. (12/11/2014) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild	
SLO #3 Large Dent Removal - Students will be able to use dent removal equipment such as the Maxi welder or stud welder to remove a large dent from an automotive panel with no rear access. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2017-18 (Fall 2017) **Input Date:** 11/29/2013	**Performance -** Students will work in groups of 2-3 or individually to remove a large dent on a body panel with no rear access. Students will (1) diagnose the area of direct impact and (2) orally present to the instructor their analysis of the damage and a proposal for how they intend to reverse the damage including their choice of tools/equipment with justification for their choice. After (3) making the repair, the group will (4) orally reflect on their choices detailing	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Met 24 students participated in this assessment, one dropped the class before the assessment was finished. 17 students used their own damaged vehicles, and those without significant damage partnered with those who did. A 'large dent' was defined for this assessment as 4" diameter or larger and 1/2" deep or more. Target #1 - Diagnosis/Impact Identification. All 24 students correctly identified the location of direct damage and angle of impact (100%). All students were able to describe how the force of the impact traveled though the metal panel,	**null.courseAction:** Purchase 2-3 more stud welder/slide hammer kits and locate/repair 2nd Maxi welder (or purchase one more). (12/31/2015) **Action Category:** Program/College Support

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
	their successes and recommendations for changes if presented with the same task again. **Standard and Target for Success:** It is expected that 100% of students/groups will be able to correctly identify the area of impact and trace the progression of damage outward. It is also expected that 80% of the students/groups will be able to adequately perform the repair to the metal panel so that if filler was applied and sanded, it would not exceed the 3/16" maximum set by ASE.	although the larger the damaged area, the more thought they had to give to the justification for what they saw. Target #2 - Repair Plan. Vehicle owners acted as team leaders who reported group decisions to the instructor. Standard repair tools included Maxi welder and stud welder, but since ACRP only has one of each, groups were challenged to think creatively to repair their damage. After some negotiation and suggestions, all plans were accepted by the instructor. Target #3 - Making the Repair. 91% of students (21/23) completed a successful repair. One group chose a glue-on dent puller better suited for small dents. Their dent was simple in that it had no creases. The glue-on puller worked fairly well to remove the dent but the group agreed the other tools would have been a better and faster choice. Another group decided the panel should be replaced instead of repaired. This is a valid conclusion in industry, so they were allowed to replace the fender which created its own set of problem-solving tasks. A third group, after trying pry-bars and indirect hammer techniques decided to remove the obstacle of access by cutting out the severely crumpled part of their panel, straightening it with hammer and dolly, then welding the panel back in. Although unconventional in modern collision repair, the students got excellent results and were quite proud of themselves. Two students working individually did not complete their repair: one dropped the class before finishing, the other abandoned his repair plan and instead used the cut out/repair/re-weld technique and did not finish the plastic fillerwork (bondo) to check for ASE specs. Target #4: Reflection. 20 of the remaining 23 students were able to orally reflect on the successes and failures of their plan and resulting repair. 3 students were absent that day. Two made up the assignment in written form, one student did not make up the assignment. Popular reflection comments included 'we should've replaced the panel' and 'we took too long'. These are great comments because	

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
		industry values replacement over large dent repairs. In lecture we discussed the balance of time vs. money when considering a repair plan. We agreed professional shops had lots of money, thanks to insurance companies paying for repairs, but very little time (impatient customers). Conversely, here in ACRP we have plenty of time, but almost no money since the vehicles and responsibility for buying parts were the students' own. The students who said they would choose the same repair plan if asked to repair a similar dent also said they felt very confident they could do it faster next time. (12/11/2014) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild	

ECC: ACRP 1C:Major Collision Analysis and Repair

No data found for the selected criteria.

ECC: ACRP 1D:Automotive Component Systems Analysis and Repair

No data found for the selected criteria.

ECC: ACRP 20:Automotive Collision Investigation

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #1 Restraint Systems - Students will be able to recognize, name, and diagnose damage to multiple types of occupant restraint systems including active restraints (seat belts) and passive restraints (automated seat belts, airbags). **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2016-17 (Fall 2016) **Input Date:** 11/29/2013	**Exam/Test/Quiz -** Quiz/test questions are used to assess students knowledge and comprehension of the topic. **Standard and Target for Success:** The target is for 100% of the students to gain a base knowledge and understanding of the topic. However, student desire and application of the materials provided is key to success. Thus, the standard is 70%.	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Met Results show an 87% success rate. (04/09/2015) **Faculty Assessment Leader:** Charles Owens **Faculty Contributing to Assessment:** Charles Owens **Reviewer's Comments:** CO: 04/09/15 - The assessment method proves to be an acceptable way to measure. The addition of more multimedia and physical props may enhance student retention.	**null.courseAction:** The assessment method proves to be an acceptable way to measure. Consider the addition of more multimedia and physical props, which may enhance student retention. Continue to monitor test scores for student success and outcomes. (04/09/2016) **Action Category:** Teaching Strategies
SLO #2 Damage to Unitized and Full Frame Vehicles - Students will be able to recognize, name, and diagnose damage to unitized and full-frame vehicles and some of their major systems (drivetrain, brakes, suspension/steering). **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2016-17 (Fall 2016) **Input Date:** 11/29/2013	**Exam/Test/Quiz -** Quizzes and Tests **Standard and Target for Success:** The target is for 100% of the students to gain a base knowledge and understanding of the topic. However, student desire and application of the materials provided is key to success. Thus, the standard is 70%. **Reviewer's Comments:** Quizzes and tests appear to be an appropriate method of evaluation.	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Met Results show an 87% success rate. (04/09/2015) **Faculty Assessment Leader:** Charles Owens **Faculty Contributing to Assessment:** Charles Owens **Reviewer's Comments:** CO: 04/09/15 - The assessment method proves to be an acceptable way to measure. The addition of more multimedia and physical props may enhance student retention.	**null.courseAction:** The assessment method proves to be an acceptable way to measure. Consider the addition of more multimedia and physical props, which may enhance student retention. Continue to monitor test scores for student success and outcomes. (04/10/2016) **Action Category:** Teaching Strategies
SLO #3 Tire Identification & Construction - Students will be able to decode tire information such as wheel size, diameter, width, offset, production date, speed rating, traction rating, and temperature rating. Students will also be able to identify different types of tire	**Exam/Test/Quiz -** Quizzes and Tests **Standard and Target for Success:** The target is for 100% of the students to gain a base knowledge and understanding of the topic. However, student desire and application of the materials provided	**Semester and Year Assessment Conducted:** 2014-15 (Fall 2014) **Standard Met? :** Standard Met Results show an 87% success rate. (04/09/2015) **Faculty Assessment Leader:** Charles Owens **Faculty Contributing to Assessment:**	**null.courseAction:** The assessment method proves to be an acceptable way to measure. Consider the addition of more multimedia and physical props, which may enhance student retention. Continue to monitor

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
construction (radial, bias ply) and identify tires by skid marks observed after an accident. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Fall 2014), 2016-17 (Fall 2016) **Input Date:** 11/29/2013	is key to success. Thus, the standard is 70%. **Reviewer's Comments:** Quizzes and tests appear to be an appropriate method of evaluation.	Charles Owens **Reviewer's Comments:** CO: 04/09/15 - The assessment method proves to be an acceptable way to measure. The addition of more multimedia and physical props may enhance student retention.	test scores for student success and outcomes. (04/10/2016) **Action Category:** Teaching Strategies

ECC: ACRP 22:Automotive Repair Fraud

No data found for the selected criteria.

ECC: ACRP 24:Automotive Collision Analysis

No data found for the selected criteria.

ECC: ACRP 26:Automotive Accident Reconstruction

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #1 Occupant Dynamics - Students will be able to predict and evaluate vehicle occupant dynamics in given collision scenarios. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2013-14 (Spring 2014), 2015-16 (Spring 2016) **Input Date:** 11/29/2013	**Exam/Test/Quiz -** Test questions are designed to evaluate the students understanding of the material. **Standard and Target for Success:** Each student is expected to have a basic understanding of the material with 70% of the student population exhibiting an applicable/working knowledge of the material. **Reviewer's Comments:** By introducing the students to the concepts, they should be able to have an intelligent conversation about the subject.	**Semester and Year Assessment Conducted:** 2013-14 (Spring 2014) **Standard Met? :** Standard Met Of the 23 students who completed the class 19 (82%) exhibited an applicable/working knowledge of the material. (10/03/2014) **Reviewer's Comments:** As expected there were varying levels of understanding and different student perspectives. However, the overall performance was pleasing.	**null.courseAction:** Additional media aids, practical examples and industry guest. (10/03/2014) **Action Category:** Teaching Strategies **null.courseAction:** Looking to add additional media aids, practical examples and invited guests. (10/03/2014) **Action Category:** Teaching Strategies
SLO #2 Photography and Computer Modeling - Students will be able to properly document vehicle damage using photography and/or computer modeling software for analysis of accident dynamics. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2013-14 (Spring 2014), 2015-16 (Spring 2016) **Input Date:** 11/29/2013	**Exam/Test/Quiz -** Test questions and exercises are designed to evaluate the students understanding of the material. **Standard and Target for Success:** Each student is expected to have a basic understanding of the material with 70% of the student population exhibiting an applicable/working knowledge of the material. **Reviewer's Comments:** By introducing the students to the concepts, they should be able to have an intelligent conversation about the subject.	**Semester and Year Assessment Conducted:** 2013-14 (Spring 2014) **Standard Met? :** Standard Met Of the 23 students who completed the class 19 (82%) exhibited an applicable/working knowledge of the material. (10/03/2014) **Reviewer's Comments:** As expected there were varying levels of understanding and different student perspectives. However, the overall performance was pleasing.	**null.courseAction:** Additional media aids, practical examples and industry guest. (10/03/2014) **Action Category:** Teaching Strategies
SLO #3 Velocity & Force - Students will be able to explain and determine a vehicle's Principle Direction of Force (PDOF), force line and Delta-V. Students will also be able to calculate combined velocities of multiple	**Exam/Test/Quiz -** Test questions are designed to assess student knowledge of covered material. **Standard and Target for Success:** Each student should be able to exhibit a basic understanding of the	**Semester and Year Assessment Conducted:** 2013-14 (Spring 2014) **Standard Met? :** Standard Met Of the 23 students who completed the class 19 (82%) exhibited an applicable/working knowledge of the material. (10/03/2014)	**null.courseAction:** Additional media aids, practical examples and industry guest. (10/03/2014) **Action Category:** Teaching Strategies

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
vehicles. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2013-14 (Spring 2014), 2015-16 (Spring 2016) **Input Date:** 11/29/2013	material with at least 70% of the students being able to exhibit a clear understanding of the concepts. **Reviewer's Comments:** By introducing the students to the concepts, they should be able to have an intelligent conversation about the subject.	**Reviewer's Comments:** As expected there were varying levels of understanding and different student perspectives. However, the overall performance was pleasing.	

ECC: ACRP 2A:Basic Automotive Painting - Refinishing

No data found for the selected criteria.

ECC: ACRP 2B:Automotive Refinishing Materials and Equipment

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #3 Formula Lookup & Toner Pour - Students will be able to retrieve a vehicle's color code and formula information, select the correct quantity for the job, and correctly pour the toners to create the paint. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2013-14 (Fall 2013), 2015-16 (Spring 2016) **Input Date:** 11/29/2013	**Performance -** Students will be given access to a vehicle or sample color chip. The students must locate the correct color code on the vehicle or online, look up the color mixing formula online, print a label, pour the paint toners to make the paint, then spray the paint and clear on a sprayout card to match the vehicle or chip. **Standard and Target for Success:** Students will be given a range of three grades: Exceeds expectations (student performs task as well as or better than a technician working in the industry), Meets Expectations (a student achieves acceptable results on his own or good results with minor hints or help from instructor or peers), and Does Not Meet Expectations (student cannot or does not complete the task with industry-acceptable results). The target for success is 80% of students achieving results in the top two tiers.	**Semester and Year Assessment Conducted:** 2013-14 (Fall 2013) **Standard Met? :** Standard Not Met The class contains 24 students. Exceeds Expectations: 3 Meets Expectations: 13 Does not Meet Expectations: 8 (5 of these did not complete the assignment) Students had no problem looking up the color code or formula. The printer did not work, so students copied the toner names and measurements onto paper. Most students had never poured toners before and the accuracy required is by the 10th of a gram (about one drop). This made students very nervous because once poured, the paints could not be removed from the container. Inacuracy caused significant colormatching issues. Students also had problems spraying the paint correctly. Waterborne paint was used, which dries slowly. Many students got impatient with the procedure of letting each coat of paint dry before applying the next which caused runs and darker-than-normal colors. Other students procrastinated until the last minute and underestimated the time needed to complete the assignment with the same runs and darkness resulting. Other issues were dirt on the cards, lack of labeling and information on the backs of the cards, dry or no clearcoat, and transparent paint (not enough layers sprayed). Overall I was disappointed the students did not put more care and effort into the project. I thought perhaps they saw it as a silly exercise rather than a project in itself, but after seeing them work and their results I think some students were too shy to complete the assignment in front of other students (in the spray booth at the same time). Some students wanted to put up masking paper over the spray	**null.courseAction:** Have students practice pouring a toner-like substance on the scale before giving this assignment. Allow students to schedule use the spray booth in groups of 4 or 5 of their choosing. 45 minute sessions will allow for 3 groups per day. (02/25/2016) **Action Category:** Teaching Strategies **null.courseAction:** Fix label printer (02/25/2014) **Action Category:** Teaching Strategies **null.courseFollowUp:** Fixed, Feb. 2014 (02/25/2014)

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
		booth windows and others attempted to wait until everyone else had finished, not realizing how many other students had the same idea. The students definitely need more practice spraying, and I will have to come up with ways to coax them over their shyness/procrastination/overconfidence. (02/25/2014) **Faculty Assessment Leader:** Patricia Fairchild **Faculty Contributing to Assessment:** Patricia Fairchild	

ECC: ACRP 2C:Automotive Refinishing Applications

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #1 Color Matching and Spot Blends - Students will be able to choose the proper color variant for color match and perform a spot blend on a repaired sample panel. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2013-14 (Spring 2014), 2016-17 (Spring 2017) **Input Date:** 11/29/2013	**Performance -** Students will evaluate a vehicle's existing paint job, locate the vehicle color code, and select variant that matches. Students will then each perform a spot blend using the variant color and clear the panel or area. **Standard and Target for Success:** The goal of the spot blend is for the small repair to be undetectable in face color match (hue, value, chroma, coarse/fine metallic) and flop. Students should use sprayout cards, color blender, body lines, and other blending tricks and techniques to help hide their blends. Rubric: Exceeds Expectations - student chooses 'blendable' match and performs blend as well as a professional painter Meets Expectations - student chooses 'blendable match' and blend is not immediately noticeable Does not Meet Expectations - student cannot or does not select blendable match, blend is noticable	**Semester and Year Assessment Conducted:** 2013-14 (Spring 2014) **Standard Met? :** Standard Met Overall: 19/25 students Exceeded Expectations 3/25 Met Expectations 3/25 did not Meet Expectations due to non-participation Breakdown: Evaluate existing paint, locate color code, select and pour a variant using toners: 19/25 students passed, 6 did not participate Create a sprayout card to evaluate color match before performing spot repair: 22/25 performed this correctly, 3 did not participate Choose a 'blendable' match (hue, value, chroma, coarse/fine): 19 exceeded expectations, 3 met, 3 did not attempt Analysis: Most students had no problem with selecting a color using the online software, mixing it, spraying a sprayout card, and handling a spray gun to perform a spot blend. Masking for the blend caused some problems (sprayed too close to masking paper causing a visible line), and precise color match was troublesome. The vehicle's original color code was not the current color of the car, so some students chose the original color assuming it would be correct, but then did not redo the assignment when the test card did not match. In short, they assumed the blending tricks demonstrated in class could be used to hide any blend, not realizing the limits of 'blendable', especially in natural light and at all viewing angles. (05/22/2014) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild	**null.courseAction:** Despite good results, it may help next time to show examples of noticeable color mismatches, mismatched colors successfully blended, and noticeable blends so students are more aware of what they can and cannot hide in a color blend. Needed: paint, clear, and small panels/test cards and the time to create the sample panels. Current student cards/panels were sprayed over for the next project. (05/23/2017) **Action Category:** Teaching Strategies

ECC: ACRP 4A:Beginning Automotive Collision Repair I

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #1 Tool Identification & Use - Students will be able to properly name tools unique to the collision repair trade and explain how they are used. Students will be able to analyze minor damage and select the correct hand tools to repair the damage. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Spring 2015), 2016-17 (Spring 2017) **Input Date:** 11/29/2013	**Exam/Test/Quiz -** This assessment consisted of a 21-question pre and post test. Students were asked to identify and label the tools. (Exam attached.) **Standard and Target for Success:** The target is 85% of students will score an 85 or above on this test. **Related Documents:** ACRP 4A Tool Identification Test.pdf	**Semester and Year Assessment Conducted:** 2014-15 (Spring 2015) **Standard Met? :** Standard Met Students scored an average of 50% on the pre-test and 90% on the post-test. This demonstrated that the lecture and practice was effective and that students were able to identify the tools related to the automotive career industry. (Data is attached.) Although the target was met, there are certain tools that students consistently misidentify certain tools such as reverse curve dinging hammer and the chisel head hammer. This can be corrected by developing more detailed images of the tools on the test paper. (06/03/2015) **Faculty Assessment Leader:** Bernardo Rodriguez **Related Documents:** ACRP 4A - Tool Identification Data.docx	**null.courseAction:** Provide more detailed images of the tools on the test to assist the students in identifying the tools more accurately. (08/21/2017) **Action Category:** Teaching Strategies
SLO #3 Mix, Apply & Shape Plastic Filler - Students will be able to mix, apply and shape plastic filler for primer on a repaired automotive panel. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2015-16 (Spring 2016) **Input Date:** 11/29/2013	**Presentation/Skill Demonstration -** Students will prepare the surface, apply the body filler, and sand the body filler. **Standard and Target for Success:** Grading is based on 4 areas: Surface Preparation, Mixing of Body Filler, Application of Body Filler, and Sanding of Body Filler. It is based on a 3 point system. (Rubric is attached.) 85% of students will score a 10 or above on this performance test. **Related Documents:** ACRP 4A -Body Filler Performance	**Semester and Year Assessment Conducted:** 2014-15 (Spring 2015) **Standard Met? :** Standard Met N=16. A total of 14 (87.5%) students scores 10 or higher on this performance test. One of the reasons that students are successful is that they are given panels on which to practice and are given feedback from the instructor prior to taking the test. Although the standard was met, I noticed that students would have benefited from having more time to work on their panels. Since this was presented near the midterm, it limited their practice time. (06/03/2015) **Faculty Assessment Leader:** Bernardo Rodriguez	**null.courseAction:** Give the presentation regarding the Body Filler Performance Test earlier in the semester so students have more time to work on their practices. (09/21/2017) **Action Category:** Teaching Strategies

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
	Test Rubric.pdf		

ECC: ACRP 4B:Beginning Automotive Collision Repair II

No data found for the selected criteria.

ECC: ACRP 4C:Course Name TBA

No data found for the selected criteria.

ECC: ACRP 4D:Course Name TBA

No data found for the selected criteria.

ECC: ACRP 5A:Beginning Automotive Painting I

No data found for the selected criteria.

ECC: ACRP 5B:Beginning Automotive Painting II

No data found for the selected criteria.

ECC: ACRP 5C:Course Name TBA

No data found for the selected criteria.

ECC: ACRP 5D:Course Name TBA

No data found for the selected criteria.

ECC: ACRP 6:Automotive Collision Repair Applications (COMPTON-ONLY COURSE-NO LONGER OFFERED AT ECC)

No data found for the selected criteria.

Assessment: Assessment Unit Four Column

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

PLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
PLO #1 ASE Certification Tests - Upon completion of this discipline's course of study, the student will be able pass at least one ASE certification test or practice test in Auto Collision Repair (B2, B3, B4, B5 or B6) **PLO Status:** Active **PLO Assessment Cycle:** 2014-15 (Fall 2014), 2014-15 (Spring 2015), 2016-17 (Fall 2016) **Input Date:** 07/01/2013	**Exam/Test/Quiz -** Students will attempt an official or imitation ASE (National Institute for Automotive Service Excellence) certification test in Auto Collision Repair. Tests vary from 75-85 questions and are in multiple choice 'Technician A/Technician B' format where a student must decide if one, both or neither statement made by the two technicians is correct. B2 is Painting and Refinishing, recommended for 2A, 2B, 2C, 5A and 5B B3 is Non-Structural Analysis & Damage Repair, recommended for 1B, 4A and 4B B4 is Structural Analysis & Damage Repair, recommended for 1C B5 is Mechanical & Electrical Systems, recommended for 1D B6 is Damage Estimating, suggested for 20, 22, 24 and 26 Students completing only ACRP 1A will not be ready for real ASE certification testing. **Standard and Rubric:** Students aim to achieve a 65% or better (passing) score. This percentage is typical of	**Semester of Current Assessment:** 2014-15 (Spring 2015) **Standard Met:** Standard Not Met The class ACRP 2A (27 students) participated in this assessment. The ASE practice test given was B2 (85 questions). These students, with one exception, had at least one prior ACRP class but may have had 4 or more. Zero students passed, two almost passed and 25 did not pass. The class contained 10 students in their 4th or more semester of ACRP study. Two of them 'Almost Passed'. The class also contained 8 three-or-more semester students, 8 two-or-more semester students, and one student in his first semester who wanted to take the test for fun. Scores ranged between 25/85 correct to 55/85 correct. Average 'Almost Pass' score was 54/85 (20%). Average 'No Pass' scores for students with 2+ semesters was 38.125, 3+ semesters was 36.5, and 4+ semesters was 41.5. Class average was 37.63/85. Testing prep was similar to last time in that a Motor Age study guide was given as homework reading. I noticed maybe a third of students reading/studying it on the day of the test. We also added two full lecture days of review of the material to our schedule. The students found the discussion of discrepancies in glossary terms and modern/historical techniques between the 'ASE way' and the 'California Rule 1151 way' (the local environmental standards for painting and paints) very helpful. Students had to remember that the real ASE test is National Rule (California non-compliant paints and techniques are still	**Action:** Next time this class is run, include 'historical' techniques and chemicals in lectures more obviously throughout the semester. Make more references to National Rule refinish procedures and contrast them with local regulations. (05/08/2017) **Action Category:** Teaching Strategies

PLO	Assessment Method Description	Assessment Data & Analysis	Actions
	real ASE certification tests which are set up as pass/fail. Target for students passing PRACTICE tests: 4-8 ACRP units completed: 30% passing 9-16 units: 50% passing 17-24 units: 70% passing 25-32 units: 85% passing Target for students passing REAL tests: 4-8 ACRP units completed: attempt not recommended 9-16 units: 30% passing 17-24 units: 50% passing 25-32 units: 65% passing	standard practice elsewhere) and had to learn outdated and illegal painting facts quickly. We treated it as a history lesson. Students still had trouble remembering the facts and correct procedures well enough to come up with the right answers to the 'real world' applications and situations described that made up the test questions however. We have a lot of work to do to better prepare students for the real ASE tests, but the students agreed their hands-on prep and painting skills improved dramatically during this semester, which the test does not monitor. (05/07/2015) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild **Courses Associated with PLO** **Assessment:** ACRP 2A	
		Semester of Current Assessment: 2014-15 (Fall 2014) **Standard Met:** Standard Not Met ACRP 2C class was chosen to provide data for this assessment. Students in 2C have taken at least one collision repair class prior, but may have 3 or more semesters of collision repair experience. 22 students attempted the ASE B2 practice test, which had 85 questions. A passing score of 65% was achieved with 56 correct out of 85. An 'almost passing' score was defined as scoring within 3 points of passing (53-55 correct). Test scores by experience (pass - almost pass - no pass): 0-16 units: 0 - 0 - 11 (average score 35.9/85) 17-24 units: 0 - 0 - 4 (average score 41.5/85) 25-32+ units: 0 - 1 - 7 (average score 44.4/85) 0% of students passed at any experience level. 12.5% of students at the top '25-32+ units completed' level almost passed (1 of 8) 0% of students in other experience levels almost passed Some of the reason for the abysmal scores was the fact that we did not lecture or study the test prep book directly. Course lecture material covered most of the test topics to	**Action:** Work with advisory members, local industry and division budget/grants to establish an ASE test fee reimbursement program for students. This reimbursement program will encourage more students to attempt the real tests which, if they pass, will help them get jobs when they are ready to start working. The reimbursement fund will also help ACRP track who is testing and who is passing, valuable recruitment data for our program. (02/28/2016) **Action Category:** Program/College Support

PLO	Assessment Method Description	Assessment Data & Analysis	Actions
		some degree and students were given a 50-page study guide to prepare for the practice test. Apparently no one took the reading assignment very seriously. The practice test was graded in the class as 15 points for attempting the test and 5 extra credit points for passing or almost passing. In retrospect, it was not much incentive but I wanted a sample of 'starting data' to see how future classes with more emphasis on ASE tests and test content could improve scores. In Fall 2014, one of these students attempted the real ASE B2 test and missed passing by only eight questions. He is the only student so far to attempt a real test despite 5 students participating in an after-class focused study group with the instructor. Most of the reason for the hesitation in taking the real test in addition to the poor scores in practice is the $69 testing/enrollment fee. When practice test scores improve, I would like to start an ASE test fund that would reimburse passing students (or all students) for their fees to eliminate the financial intimidation to try and some of the pressure to pass. ASE certification is quite an honor and a big resume boost for ACRP graduates. We need more students to attempt and pass ASE tests. (05/08/2014) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild **Courses Associated with PLO Assessment:** ACRP 2C	
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.	**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	**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	

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PLO Status: Active **PLO Assessment Cycle:** 2014-15 (Fall 2014), 2017-18 (Fall 2017) **Input Date:** 10/04/2013	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. 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	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 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	

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		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 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	
PLO #3 Damage Repair Estimate - Upon completion of this discipline's course of study, the student will be able to examine a damaged vehicle and create an informal written estimate of the parts, tools, materials and time needed to repair the vehicle.	**Essay/Written Assignment -** Student will be able to examine a vehicle with non-structural damage to multiple major panels and (1) determine the initial point of impact. Student will then be able to write (2) an estimate or (3) a repair plan to repair the vehicle. Estimate will include vehicle information and an ordered list of	**Semester of Current Assessment:** 2014-15 (Fall 2014) **Standard Met:** Standard Not Met ACRP 1A was chosen to provide data for this assessment. 1A is an intensive beginning class that covers all areas of collision repair including tool and vehicle parts nomenclature, vehicle construction, welding, non-structural dent repair, priming, painting, and, at the end, estimating and jobs within collision repair. Although these students have just begun their ACRP studies, they provide a 'base data' group to compare future data to. Estimating is not covered in all classes and has not yet been tracked.	**Action:** Work with ACRP instructors at ECC and Compton as well as advisory committee to rewrite/update and reinstate ACRP 3A estimating class as two 8-week 3-unit classes similar to 20, 22, 24 and 26 that would lead to a 6-unit mini certificate in one semester. Class curriculum should include writing non-structural and structural damage estimates on

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PLO Status: Active **PLO Assessment Cycle:** 2014-15 (Fall 2014), 2018-19 (Fall 2018) **Input Date:** 10/04/2013	damaged panels and parts with notation to repair, replace, refinish, etc. and include part price, labor and refinish hours, materials add-on costs, and total cost for the repair according to Mitchell estimating books/software or CCCOne software. Repair plans will include description or digital photo of the damage, designation of major point of impact (direct damage) and location of indirect damage. Plans will also include list of tools, parts and materials needed for repair as well as an estimate of time in hours or days needed to complete the repairs. **Standard and Rubric:** 80% of students completing the day program (1A, 1B, 1C, 1D, 2A, 2B, 2C) or the night program (4A, 4B, 5A, 5B) including 20, 22, 24, and 26 should be able to complete a written estimate with a total cost within 20% of a professionally written estimate. Students with a mix of day and night courses uncomfortable with writing an estimate may write a repair plan and perform the repair. Success is defined as 80% of students completing the repair according to their plan and within 20% of the time allotted in the plan.	Estimating used to be its own class (ACRP 3A), but it was inactivated years ago. ACRP instructors at ECC and Compton, as well as advisory members, strongly agree the class needs to be updated and reinstated if students are expected to have a well-rounded collision repair education. In 1A after lecturing on the topic for a week and writing individual estimates with instructor guidance, the students were asked to form 3 groups and consider the quote, "Speed, quality, price. Pick any two." Students discussed as a class how a shop that picks two might perform their work, treat a customer, and focus their talents. A shop that values speed and high quality cannot stay in business if they also have a great low price, for example. Each group was assigned two of the three, then all students were given access to an 8-year-old minimally damaged minivan. The students then had to work together to write one estimate as their shop using the Mitchell printed estimating guides for help with labor times and replacement parts costs. Target #1 - Determination of point of impact. 100% of students were able to do this. The hood had a small dent near the fender and the bumper had scratches on the same side of the vehicle. Target #2 - Writing the estimate Vehicle info: 100% of groups were able to find necessary vehicle information such as year of manufacture, make, model, body style, trim package, VIN number and license plate number. Ordered list of damaged parts: 100% of groups were able to correctly list damaged items from front of vehicle to rear. Groups focused on quality included color matching the fender and removing the bumper cover and painting it separately. Both of these are standard practice within the industry but may not be performed by a shop focused on low price. Students were quick to notice that the whole van looked tired and dull and were unsure where to end their	paper using printed estimating guides and on a computer using estimating software. Curriculum should also include vehicle parts nomenclature, ASE and I-CAR repair standards, and legal rights, responsibilities and liabilities for vehicle owner, repair facility and insurance company. (09/30/2015) **Action Category:** Curriculum Changes

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		estimate. We discussed 'pre-existing condition' as the goal of any collision repair shop as opposed to 'restoration'. Repair/replace: 100% of students were able to justify their choices to repair or replace parts and included the correct refinish times. They had difficulty with adding labor time for clearcoat and blending adjacent panels. These are topics too advanced for one week of lecture, but were discussed for student awareness. Parts and labor costs: Students who chose to replace panels also correctly identified the parts cost in the estimating guide. Locating and recording labor times was more difficult, especially since the times are written in tenths of an hour and kept separate for body labor and paint labor. Although 100% of groups came up with the right answer, I suspect not everyone in the group understood it enough to do it himself. Hidden parts and small parts such as bumper reinforcement bars and plastic clips were not included in most estimates. Future lectures need to emphasize the importance of these 'little' items to the financial survival of the shop. Hidden items are a more advanced level of estimating that are better suited to students with more experience taking vehicles apart and putting them back together. Materials add-on costs: These include such non-panel-specific items as color match, nib and polish, cover car for overspray and hazardous waste disposal. 100% of students dutifully added them because they were supposed to, but not every student fully understood why they are needed. Calculation of totals: After no small amount of grumbling about mathematical ability and a bit of practice, students were able to calculate labor and materials costs quite well. They even wanted to calculate the tax on materials. Apparently, putting a dollar sign in front of numbers makes math a lot more interesting. 100% of groups were able to calculate the estimate totals correctly, but again, I suspect not every group member could have done it on his own.	

PLO	Assessment Method Description	Assessment Data & Analysis	Actions
		Standard: Even though all groups created their estimates with a fair degree of accuracy, their totals did not come within 20% of an professional estimate and could not be used for professional repairs. The little and hidden items missing, the lack of blend or color match time, etc. are errors common to those just learning collision repair for the first time. Overall I am very proud of their efforts and how far they've come learning so many different ACRP topics in such a short time. (12/01/2014) **Faculty Assessment Leader:** patricia fairchild **Faculty Contributing to Assessment:** patricia fairchild **Courses Associated with PLO Assessment:** ACRP 1A	

Appendix G

Priority	Item	Category	Est. Cost	Justification	Notes
BUILDING FIXES					
1	Lacquer thinner and paint room locks	Facilities	$100 plus install	Almost $100,000 worth of paint toners and precision measuring equipment is currently stored in these unsecured rooms, accessible to anyone in the ACRP yard or who can climb over the yard wall. The most expensive bottles are small enough to fit in a pocket.	Request regular mechanical locks, not electric locks - rooms contain flammable chemicals.
2	Spray booth compressed air lines	Facilities	$75 plus install	Anyone wishing to use the spray booths must drag an outside air line into the booth. This air is not regulated or filtered for oil and contaminants, and the hose routed under the door creates an air leak for paint fumes to escape, which is against the law.	Four DeVilbiss wall mount water and particle filters were donated by students who received them free with purchase of a spray gun. They just need to be plumbed and mounted with correct fittings.
11	Outdoor lighting for yard	Facilities	$2500 plus install	Yard was designed for student work, but only emergency lighting was installed. This light is insufficient for working and creates a safety hazard for students working in the yard at night.	Requst white or 'daylight' light, not arc sodium yellow.
9	220v 3-phase power for STRSW welder	Facilities	$200 plus install	This high-tech welder sits unusable without the correct power supply and electrical sockets. At least two, ideally 4 sockets should be installed (1 in the fabrication area and 1-3 in the lab). I-CAR survey in 2013 lists MIG welding and 'Remove and replace welded parts' as two of ten mandatory skills for entry-level technicians.	When 4-post hoist is installed, it will likely need 220 3-phase power as well.
12	Additional compressed air lines and electrical sockets for yard	Facilities	$2500 plus install	Compressed air and 110v electrical drops near the lab roll-up doors should be split or duplicated to provide compressed air and electrical power to students working in the outdoor stalls. The existing lines were placed between stalls and only provide air and power to the two adjacent indoor stalls.	50' air hoses: approx. $25 each, with reel: $145. Fittings: approx $3 each.

8	Roof extensions for outdoor covered areas	Facilities	$3000 plus install	The current roofs are about one foot short of the walls, which let in rain and cause equipment to rust. Rainwater causes the inside back wall of the spray booths to sheet with water, making for humid and potentially disatrous painting conditions.	Quarter-round clear UV-resistant plastic could cost-effectively bridge the roof-to-wall gap and maintain natural light. 1/4"x24"x48" polycarbonate sheets run $42 each from eplastics.com + thermoform. Approx. 190 linear feet of roof need extensions.
6	Vacuum bag attachments for hand-held sanders	Equipment	$250	Since the vacuum lines installed in the new building are incompatible with our sanders and an evacuation system is highly recommended to minimize particle inhalation hazards, the most cost-effective fix is to purchase vacuum bags that attach directly to the sanders and filter the exhausted air.	3M self-generating vacuum bags (filters) p/n 20452: $40 for pack of 10 at autobodytoolmart.com. Adapters for sanders p/n 20453: $8.29 each, same vendor.
7	Spray booth ramps for vehicle access	Facilities	$200	Due to architect error, the spray booths were built on 4" concrete platforms without ramps for vehicle access. Students should not have to risk wheel or suspension damage to use the spray booths.	Welding department could make these and ACRP could paint them. 3/16"x18"x48" steel diamond plate costs approx. $80, need 2.
15	Floor sealer for lab floor	Facilities	Approx. $4/sq.ft. installed	Lab floor should be sealed with an oil-resistant coating that is easier to sweep. Unsealed floor absorbs oil, traps dust and looks unprofessional.	Garage floor epoxy sealer (not paint), light grey. Allgaragefloors.com. German Magana has offered to donate installation if material is purchased.

19	Hang ACRP Porsche	Facilities	$250 plus install	This eye-catching item has represented ACRP for many years. Its inclusion in the new building was planned since the beginning and the west wall of the lab was left intentionally blank to specifically to highlight this decorative element that makes its impression on anyone entering the lab from the main hallway entrance. The outer shell comprises 3 parts: fiberglass fender, metal door shell, fiberglass quarter panel. These parts attach to remnants of the original car body supported by thick steel reinforcements. This inner construction could be gutted and a new, lighter, equally strong tube frame could be built by the Welding department. The car could be hung from the ceiling I-beam near the west wall and attached to the wall to keep it from swinging in an earthquake.	Current weight estimates run 500-750 lbs. Curb weight of a whole car with all-steel panels, engine, drivetrain, fluids, etc. is 2760 lbs. With new tube frame reinforcements, weight could drop to 150-200 lbs.

INDUSTRY CERTIFICATIONS

3	I-CAR PRP-EE Curriculum	Software	$10,100 for 60 students	Students who complete I-CAR Platinum certification are much more valuable to potential employers because shops must maintain a near-100 percentage of certified employees for their shop to remain certified. In industry, certification classes run $99-125 each and expire after one year. To certify new technicians, a shop would spend $2375 each over their first three years. Certification remains with the technician if he quits or transfers.	Free copy of this license was requested in 2015 through the I-CAR Education Foundation grant.
10	ASE Student Testing	Fees	$30 per student per year	ASE Certification for technicians has been deemed 'Important' by Advisory Committee members and shop owners. ASE Student Testing prepares students for official ASE certification testing and allows ECC to track student test results and compare them with data from other participating schools. The fees could be paid by each student. All ECC needs is an account administrator, testing room (computer lab) and proctor.	

22	NATEF Certification for ACRP	Fees	$1,000	NATEF certification identifies schools that have met high standards for modern technology, industry-correct curriculum and repair procedures and student support. Currently only 3 collision repair programs are NATEF certified in California. Obtaining certification would open ACRP to industry donations from the many companies that look for this designation.	An expenses-paid review team of 8 industry professionals is needed for the last step in Certification.
STAFFING/CURRICULUM					
4	Program Aide	Staffing	$2210/yr	Single full-timer department's faculty does not have enough time during industry business hours to keep up with initial industry outreach campaign, student job placement and resume website projects, phone calls, filing, and general office tasks related to student job placement and department promotion. Having one dedicated person overseeing office tasks would present ACRP in the most organized, efficient and professional light.	Casual Level 4 assistant working maximum 170 hours per year at $13.00/hr (Rate A).
13	Two part-time instructors	Staffing	$52,000/yr	The splitting of ACRP 32-unit general Certificates into 'fast-track' 18-22 unit job-specific Certificates will necessitate the hiring of two part-time faculty to teach in the afternoons and on Saturdays. Job-specific certificates will necessitate offering specific classes in a tighter rotation rather than a standard rotation because students will need specific classes to fulfull graduation requirements, not the any-ACRP-units-will-do Certificates that exist now.	
14	Estimating software install in campus computer lab	IT	labor only	Install and maintain annually donated damage estimating software in a campus computer lab for class and student use during updated 3A estimating classes.	30 licenses given

INDUSTRY OUTREACH/STUDENT JOB PLACEMENT

5	Student/alumni resume website	Staffing	labor only	Creation of an easy 'one-stop shop' website for local employers to find and hire students and alumni of auto mechanical and collision repair programs will position ECC as a reliable supplier of quality employees and help create demand for the programs. Currently no websites exist to provide this level of locally-focused, automotive-targeted, quality-candidate location assistance to employers.	ACRP faculty can design an interface, but will need the Innovation Center's help with password protection and website-database integration. Faculty will need Programe Aide's help with site maintenance.
18	Industry outreach & student job placement advertising campaigns	PR	$2500 printing and postage	ACRP faculty has found it nearly impossible to meet with local shop owners in person during business hours, so multiple print advertising campaigns are planned to introduce shops to ACRP and its students and begin lines of communication regarding student job placement, specific skill and procedure training desired and other win-win opportunities.	Faculty can design an impressive printed mailer campaign and supporting webpages on ECC website. Will need Program Aide assistance in webpage upload and following up with industry responses in the form of answering phones, emails, and scheduling meetings.
20	Inter-campus student car show/job fair	Event	$8,000	This multi-campus annual event is designed to grow into the premiere automotive student job fair in Southern California. Currently, nothing like it exists (with the possible exeption of local SkillsUSA competitions that do not focus on hiring, only skills). It will bring local industry and donating vendors to campus and put students and their work on display for all to see. It will be a media-intensive event that will encourage friendly competition between campuses and boost student determination and work quality by bringing plenty of attention and donated prizes such as tools to the winners. The five campuses that have auto collision programs will take turns hosting this event.	Compton College has volunteered to host the first event, but planning, organization and promotion duties will fall to ACRP faculty.

TOOLS & EQUIPMENT

23	Aluminum repair and welding equipment	Tools	$11,840	Aluminum has been identified by Advisory Committee as one of the most important indusry developments affecting collison repair today. To keep up, ACRP will need some new tools and attachments to properly train technicians to deal with aluminum-bodied vehicles such as Ford trucks and Mercedes-Benz.	Aluminum dent repair tools and MIG welder attachments for welding aluminum have been requested in the 2015 I-CAR Education Foundation grant. Winners are announced in November. Requested: One AluFix dent repair kit ($7500), two aluminum-capable MIG welders ($1250 each), two aluminum wire spooling devices for MIG welders ($920 each).
24	Diagnostic scanner(s)	Tools	$3,500	The ability to use a computerized diagnostic scanner has been identified as 'Important' to 'Very Important' by Advisory Committee members, and has been identified as one of the ten basic skills mandatory for entry-level technicians by a 2013 I-CAR survey of industry.	Request OTC Genisys Touch scanner, p/n 3895; Alfredo Ortiz (advisory committee) has offered discount pricing.
25	Frame rack and computerized measuring system	Equipment	$85,000 plus ship and install	Current Chief EX-Liner II rack is operational but dangerously narrow for regular-duty pickups and SUVs. Both winches have broken in 2015 leaving the rack unsafe to load and unload. The Titan 360 model is wider, longer and can be used at any angle around the vehicle. The current rack only handles pulls on one end of the vehicle at a time, necessitating the vehicle to be loaded backwards (driven up the ramp in reverse) for rear hits. The current Genesis computerized measuring system's software is severely outdated and this model of device no longer offered by the manufacturer. The newest model is called LaserLock and has smart features such as live feed to monitor frame pulls as they happen and safeguards to prevent pulling when vehicle or system have not been set up correctly- perfect for students.	Request Chief Titan 360 rack and LaserLock measuring system

16	4-post vehicle hoist	Equipment	$6,000	Vehicle hoist is needed to offer whole classes of students to safely view a vehicle's construction, parts and damage. Provides safer, damage-free lifting for parts removal and installation than the hydraulic jack and jack stands students currently use. Hoist also allows physically challenged students to work on the sides of a vehicle at a comfortable working height.	
17	Anchor pots installed, Power Post equipment	Facilities, Equipment	$2200 plus install	This system of vehicle repair is for jobs too small for the frame rack but too large for pneumatic or hand tools. It is an older system, but one that is still used by shops due to its simplicity and low cost. It is good for teaching students the geometry of frame rack pulls at an easy-to-view floor level. Advisory committee recommends exposing students to all aspects of vehicle repair, so a variety of pulling equipment will be good exposure for them.	German Magana has volunteered to professionally install the anchor pots if we purchase.
21	Lockable parts storage	Facilities	$750 plus install	When ACRP outreach campaigns begin to bear fruit in the form of donated vehicle parts and materials, lockable storage will be needed to store the parts. Currently, pallet racks are in place in the fabrication area of the yard, but no security fence or device has been established. If that three-walled room could have a chain link fence installed as a fourth wall to create a lockable room, there could be plenty of space for donated and student parts as well as securing the fabrication equipment.	Chain link fence would need a wide, lockable entry door that could be unlocked from inside or outside. Existing curtain could be taken down and retained for future replacement of other curtains when necessary.

26	Hybrid or electric training vehicle	Equipment	Donated	Hybrid and electrical vehicle safety and repairs have been identified by Advisory Committee members as an important industry trend ACRP should prepare for and provide training in. These high-voltage vehicles can be lethally unsafe to work on if not disabled properly. The donated vehicle could be altered for safety by the Electronics department to work like the children's game of Operation, creating a buzzing noise when students do not perform disabling procedures correctly. This vehicle could also train students to work with airbag systems, 12-volt electrical systems and on-board computer systems as well as general repair and parts identification assistance.	Mitsubishi Motors, Toyota, Kia and others occasionally have unsellable, minimally or undamaged vehicles and parts for the asking. Crush certificates promising vehicles and parts will not be sold or bartered must be provided by ECC.

Appendix H-1

ADVISORY COMMITTEE - SPRING 2012

Attendees:

Kathryn Carter, student representative, ACRP and ATEC
Steve Corbin, fleet sales manager, NAPA
Joe DiDonato, collision training manager, Toyota Motor Sales, USA Inc.
Charles Eddy, principal modeler, Honda R&D, Americas Inc.
Steve Rall, account representative, MEDCO Tools
Angelica Gomez, manager, L&J Auto Body and Paint
Dave Eddings, owner, NAPA Hawthorne
Bob Dalton, account representative, Genuine Parts Group
Gilbert Daniel, outside sales, NAPA
Pati Fairchild, faculty, ACRP
Brent Kooiman, faculty, ACRP
Chuck Owens, faculty, ACRP

Agenda:

1. Introductions

2. Department News
    a. CTEA Grants - $38,000 in 2011, $43,000 in 2012
    b. Napa/Martin Senour paint toner system donation
    c. Honda R&D internship partnership
    d. Graham Oats memorial

3. Stats & Progress
    a. Program Review report
    b. Degrees and certificates awarded
    c. Success and retention
    d. New Shops building
    e. Social media – "El Camino Auto Collision Dept." on Facebook
    f. Department outreach - Girls in the Garage

4. Opportunities & Challenges
    a. Jobs for graduates
    b. Inter-campus car show/job faire
    c. I-CAR Education Foundation makeover grant
        i. Graduate and employer letters of recommendation
        ii. 10-minute video
    d. ASE testing, I-CAR training for students

Upcoming:

Girls in the Garage – Saturday, April 21 and May 7 from 9-11am - ACR/P Shop
Graduation/End of Semester – Thursday, June 6

Appendix H-2

ADVISORY COMMITTEE & INDUSTRY SURVEY RESULTS - SPRING 2013

Participants:

Angelica Gomez
L&J Auto Body & Paint
4020 Marine Ave.
Lawndale, CA 90260
310-644-5453

Tim Brown
Auto Center Auto Body
1400 Camino Real Ste. B
San Bernardino, CA 92408
909-763-4490
tim@highlandab.com

Survey Results:

1. **Which of the following has been your biggest disappointment regarding current applicants/new hires? (Choose all that apply)**

		Responses
a.	Can't fill out an application form properly	0
b.	Poor interview skills	0
c.	Poor attendance/frequently late/generally unreliable	0
d.	Quit unexpectedly or after a short term of employment	0
e.	Poor attitude/work ethic	1
f.	Poor hand skills/technical knowledge	2
g.	Other:	0

2. **From your knowledge of local collision repair shops, what is the average pay rate for the following job titles? Is the pay hourly (H), flag hour/commission (F), or salary (S)?**

		Angelica - LA	Tim - Riverside
a.	Body man/frame technician	$15 per hour	$14-16 flag hour
b.	Bodyman's helper	$12 per hour	$10-15 per hour
c.	Painter	$16 per hour	$14-16 flag hour
d.	Second painter	--	$14-16 per hour
e.	Painter's helper	$12 per hour	$8-15 per hour
f.	Detailer/buffer	$13 per hour	$10-15 per hour
g.	Porter	--	$8-10 per hour
h.	Estimator	$25-35 per hour	$3000-6000/mo salary
i.	Insurance adjuster	--	--
j.	Receptionist	--	$8-14 per hour
k.	Shop manager	$5000/mo salary	$5000-8000/mo salary
l.	Dealership shop owner	--	Hundreds of thousands to millions
m.	Independent shop owner	$100,000/yr	$50,000/yr to millions

3. **What basic technical skills MUST a new technician possess to be hired for the following positions?**

Bodyman's helper	T: Tool nomenclature and how to use them and identify body parts and is great if they can Remove and Install most body parts and trim without damaging them A: Welding, frame, body filler application
Second painter	T: Be able to prep and spray most paints and have paint mixing skills. Extra

	points if he has some color matching skills A: Prep, masking, knowledge of various primers, buffing
Painter's helper	T: Be able to prep, feather and mask with extra points if he can prime or jamb parts A: Prep, masking, knowledge of various primers, buffing
Detailer	T: Clean/Detail a vehicle and be able color sand and polish without burning through or leaving swirls A: Angle polisher, type of pads and polish to use
Porter	T: Neat appearance, polite and a good attitude A: (no response)
Estimator	T: Know at least one estimating system and be able to write a complete and thorough estimate including frame and suspension damage. Extra points if they are know the program guidelines for at least one insurance DRP program A: Customer service, understand metals, using Mitchell or other estimating software, I-CAR certified

4. What tools MUST a new technician own to be hired for the following positions?

Bodyman's helper	T: None but it is nice if they have or will purchase their own hand tools A: DA sander, grinder, metal hammers, specialty tools
Second painter	T: None but nice if they have or will purchase sanders and spray guns A: Paint gun
Painter's helper	T: None but nice if they have some of the prep tools A: Primer gun

5. How important is technician I-CAR Qualification to your shop or shops you work with?

	Responses:
a. Critical	1
b. Important	1
c. Nice to have	0
d. Take it or leave it	0
e. Not important	0

6. How important is technician ASE Certification to your shop or shops you work with?

	Responses:
a. Critical	0
b. Important	0
c. Nice to have	2
d. Take it or leave it	0
e. Not important	0

7. How would you rank the local need for each autobody curriculum topic below?
(3 = urgent need, 2 = strongly recommended, 1 = preferred, 0 = not recommended)

	Angelica - LA	Tim - Riverside
a. Basic collision repair/vehicle disassembly, reassembly	3	3

b.	Painting and paint prep	3	2
c.	Collision fraud investigation and crash analysis	0	1
d.	Frame straightening	2	3
e.	Computerized Frame/Unibody Damage Analysis	2	3
f.	Damage Estimating	3	3
g.	Spot painting/mobile detailing/custom painting/pinstriping	2	2
h.	Vehicle design/custom design, parts fabrication, composites	3	0
i.	Restoration	1	1
j.	Upholstery	1	0
k.	Other: Retrieve, read & understand OE repair data (All Data)		3
l.	Other: Welding, STRSW welding, aluminum welding/repair		3
m.	Other: Vehicle construction/how heat affects different metals		

8. What auto body-related jobs do you see as having significant local growth potential in the next:

a. 5 years: Manufacturer specific repair and certification and more electronics; aluminum repair, composite repair
b. 10 years: Same as above with varied metals and composites; hybrid technology

9. In your opinion, has the local collision repair industry recovered from the economic recession?

a.	Yes, completely recovered and growing	0
b.	Recovered, but not ready to grow	1 - Tim
c.	Not recovered, but showing improvement	1 - Angelica
d.	Still declining	0

Appendix H-3

ADVISORY COMMITTEE - SPRING 2014
MEETING NOTES & SURVEY RESULTS

Attendees:

Diana Andrew, student representative, ACRP and ATEC
Kathryn Carter, student representative, ACRP and ATEC
Steve Corbin, fleet sales manager, NAPA
Joe DiDonato, collision training manager, Toyota Motor Sales, USA Inc.
Charles Eddy, principal modeler, Honda R&D, Americas Inc.
Roger Godin, senior account manager, Finishmaster
Rob Lee, South Bay Tools, Snap-On Industrial Brands
Randy de Leeuw, HR manager, NAPA
Alfredo Ortiz, territory manager, Western States Marketing/NAPA
Steve Rall, account representative, MEDCO Tools
Eddie Ramos, account representative, NAPA
Stacy Ramos, account representative, NAPA
David Wong, Mitsubishi Motors
Michael Anderson, faculty, ATEC
Robert Beaudoin, faculty, ATEC
Pati Fairchild, faculty, ACRP
Hiram Hironaka, faculty, ATEC
Brent Kooiman, faculty, ACRP
Chuck Owens, faculty, ACRP

Survey Results (18 surveys received):

1. Department.
    a. 9 - Collision Repair & Painting
    b. 7 - Automotive Technology
    c. 1 – Welding

2. What industry or service sector are you in?
    Aftermarket auto parts, automotive research and development, auto insurance, tools and equipment, auto distributor

3. Is there a demand for this program/industry in the South Bay?
    a. Yes – 16 (9 collision, 7 auto tech)
    b. No – 0

4. Is the industry in:
    a. High demand – 10 (6 collision, 4 auto tech)
    b. Average demand – 3 (2 collision, 1 auto tech)
    c. Limited demand – 1 (0 collision, 1 auto tech)

5. Describe/explain the demand:
    a. Collision: real shortage today, Tesla and Honda centered in this area, repairs and technology expanding, high demand for trade, need for high-tech equipment, job entry techs lack basic skills for real work
    b. Auto Tech: Millions of cars require maintenance, warranty dealer support, techline, tech training

6. Do you foresee significant growth in the next 2-5 years in jobs due to the following?
    a. Retirements – 9 (6 collision, 3 auto tech)
    b. Technological changes – 15 (9 collision, 6 auto tech)
    c. State regulations – 5 (4 collision, 1 auto tech)
    d. Market growth – 12 (5 collision, 7 auto tech)
    e. Other: Increased auto sales – 1 (0 collision, 1 auto tech)

7. Please list entry job titles and pay rates at your company
    a. Drivers - $10/hr
    b. Inside sales/customer service - $16/hr
    c. Inventory - $12/hr
    d. Warehouse/delivery
    e. Apprentice – $8.50-10/hr
    f. Delivery - $9.35/hr
    g. Center trainee - $11.37/hr
    h. Exec. Management trainee – salary
    i. Shop technician - $20/hr
    j. Warranty return/audit - $45,000/yr
    k. Techline specialist - $55,000-65,000/yr
    l. Accessory developer - $65,000-75,000/yr
    m. Technician trainer - $65,000-75,000/yr
    n. Dealer sales trainee - $65,000-75,000/yr

8. What type of technical skills should entry level workers be able to demonstrate?
    a. Collision Repair: Recognizing paint types; surfacing, painting, assembly; verbal/computer, basic parts knowledge; work ethics, organizational skills; subject matter competency, current knowledge of collision repair and refinish; painting prep and application
    b. Auto Tech: Mechanically minded, parts knowledge, driver's license, customer service, ASE certifications, Bachelor's Degree for executive management, able to use tools and diagnostic scanners, use service/repair information and computers, basic understanding and diagnostic skills

9. What type of equipment or computer software should entry level workers be able to use?
    a. Collision Repair: Software for parts/repair procedures, wheel alignment, UNIX, email, Word, Excel; diagnostic scanners, A/C recovery, MS Word; Microsoft Office Suite/Windows; tune and testing of non-structural and structural welds, be able to access OEM data; www.techinfo.toyota.com; www.OEMonestop.com; basic computer skills; MS Word and Excel
    b. Auto Tech: Basic computer skills; MS Word and Excel; math, English, PowerPoint; basic hand tools and equipment; DVOM, scanner, oscilloscope

10. Soft Skills. (Collision/Auto Tech)

	Not Important	Somewhat	Very Important
a. Ability to communicate effectively	0	0	16 (9/7)
b. Ability to work with others	0	0	16 (9/7)
c. Show up for work on time	0	0	15 (9/6)
d. Team player	0	0	15 (9/6)
e. Ability to problem-solve	0	2 (2/0)	13 (7/6)
f. Follow instructions/procedures	0	0	15 (9/6)

g. Good manners	0	3 (1/2)	12 (8/4)
h. Integrity	0	0	15 (9/6)
i. Empathy	0	6 (3/3)	9 (6/3)

11. Academic Skills. (Collision/Auto Tech)	Not Important	Somewhat	Very Important
a. Basic math	0	3 (3/0)	11 (6/5)
b. Beginning algebra	5 (4/1)	7 (4/3)	2 (1/1)
c. Geometry	4 (2/2)	9 (6/3)	1 (1/0)
d. Advanced math	4 (3/1)	6 (3/3)	3 (2/1)
e. Ability to write	0	2 (1/1)	11 (7/4)
f. Ability to read	0	2 (1/1)	11 (7/4)

12. Technical Training. (Collision/Auto Tech)	Not Important	Somewhat	Very Important
a. Industry certification	0	6 (3/3)	10 (6/3)
b. Community coll. specialization cert.	0	9 (5/4)	6 (4/2)
c. Some college courses	0	6 (3/3)	9 (6/3)
d. Associate degree	0	8 (5/3)	7 (4/3)
e. Bachelor's degree	4 (2/2)	6 (4/2)	5 (3/2)

13. Licensure and industry certifications
    a. Auto Collision: A/C certificates; ASE, I-CAR; computer courses; warehouse training; management training; I-CAR; MAC 609/ASE; ASE B2-B6; I-CAR welding, paint product certifications; SkillsUSA; welding certification
    b. Auto Tech: ASE, P2, BA, AS; ASE certs A1-A8; BA; BAR Smog cert.

14. Does your company provide any of the following for current employees:

a. Tuition reimbursement	7 (4/3)
b. Flexible work schedules	7 (4/3)
c. Scholarships	2 (2/0)
d. Other: Free student training/discount	1 (1/0)
e. Other: Internship	1 (0/1)

15. ECC I&T is responsive to my needs as an employer

a. Strongly agree	9 (6/3)
b. Somewhat agree	3 (2/1)
c. Neutral	1 (1/0)
d. Disagree	0
e. Strongly disagree	0

16. ECC I&T adapts quickly to technological changes in my industry

a. Strongly agree	4 (3/1)
b. Somewhat agree	6 (4/2)
c. Neutral	2 (0/2)
d. Disagree	1 (1/0)
e. Strongly disagree	0

17. ECC I&T adapts quickly for training workers in my industry

a. Strongly agree	5 (3/2)

b. Somewhat agree 5 (3/2)
c. Neutral 3 (2/1)
d. Disagree 1 (1/0)
e. Strongly disagree 0

18. ECC I&T is an approachable, collaborative partner
    a. Strongly agree 12 (7/5)
    b. Somewhat agree 2 (2/0)
    c. Neutral 1 (1/0)
    d. Disagree 0
    e. Strongly disagree 0

19. Would you be interested in offering paid internships to students?
    a. Yes 5 (4/1)
    b. No 4 (3/1)

20. If yes, please provide contact info:
    a. Randy DeLeeuw, NAPA (already offering internships), 951-360-0880 x2204
    b. Alfredo Ortiz, 714-235-7304

21. Any comments/questions you would like to add?
    a. Collision: NAPA will answer your needs; keep me informed of available students w/ skills; observe SkillsUSA Olympics; contact me (Joe DiDonato) for no cost Toyota/Lexus training for teachers
    b. Auto Tech: none

Requests/notes from the meeting:

- Dave Wong (Mitsubishi) requested a donation suggestion list from ATEC and ACRP
- NAPA requested a 'list of the best' for ease of hiring
- Student representatives want: a quicker path to the top/experience; broader explanation of careers, advisor/career counsellor; soft skills/how to sell myself
- Committee voted that student exposure to all areas of the repair process was more important than focusing on just basic tech skills (although they must get the basics)
- The idea that the auto repair industry as a whole is a 'small community concept' provides opportunity as well as competition

Advisory Meeting Minutes & Survey Results

Auto Technology & Auto Collision Repair/Painting
April 22, 2015

Attendees:

Danny Votel, PPX Reps/Devilbiss
Dave Wong, Mitsubishi Motors
Rob Lee, South Bay Tools/Snap-On
Steve Rall, Medco Tools/NAPA
Steve Corbin, Eddings Bros. NAPA
Kathryn Carter, student representative
Valencia Rayford, ECC Counselor
Hiram Hironaka, ATEC
Harry Stockwell, ATEC
Mike Anderson, ATEC
Pati Fairchild, ACRP
Brent Kooiman, ACRP

Meeting Notes:

ATEC Department News

- Building/smart classroom tour
- Hiram's retirement party info (May 1st, 4:30pm, CAT Building)
- New instructor next fall pending acceptance
- PRP requested equipment/funds

ACRP Department News

- Students continue to request job placement partnerships (Danny & Steve C will help), upholstery/interior (Steve C gave biz card of potential instructor), and estimating classes (Chuck Owens volunteered to help w/ curriculum before mtg)
- Proposal to start Autobody Club (students interested)
  - Board vote - club to replace Girls in the Garage? (No)
- Industry outreach – 'Action Figures' campaign (vote to approve message: Approved)
  - Additional ideas: video promotion clip, video student resumes, community ed.
  - Admin. supportive of guest speakers and short outside training programs held here
- NATEF status (ATEC & ACRP agree admin. permission granted but no help since, limbo)
  - Adv. Board: "What is value of NATEF certification?" (Donations in kind, status)
  - Next steps: assemble self-evaluation teams
  - Rob Lee has helped LATTC with NATEF Certification
- I-CAR Ed. Foundation Grant – need letter of recommendation from admin. & Adv. Board
  - (Steve C and Danny volunteered to write letters, Valencia suggested ECC film dept. help with video requirement)
- Success stories – success and completion #s exceeding state average more often recently
  - Possible 30% budget increase (Valencia: "Will it go to adding classes?" Don't know)
  - Kathy C received scholarship, Brian Demeules received academic recognition award $

ACRP Compton Department News

- Brent will boost focus on aluminum repair, TIG welding and fabrication. Ford & Mercedes

Advisory Member Feedback

- Valencia: Career Coach program highlights campus programs & jobs – contribute!
- Danny: Showed video shot during Brent's class of students using Devilbiss demo products
- Valencia: ATEC day/night program separate? (No)
- Harry: Value of 8-unit classes, supported by Brent
- Steve C: Napa instructors from headquarters available for guest speaking/training
- David: Mitsubishi (and Kia, Honda, Toyota) wants to donate cars, needs letters requesting cars/parts, can ECC provide crush certificates (promise to destroy, not sell/distribute)?