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▼ ▼  **Dept - (B/CS) Automotive Technology** 

2018-19 Annual Program Review Update Submitted By: Dave Capitolo

APRU Complete for: 2017-18

Program Mission Statement: Mission:

The mission of the De Anza College Automotive Technology Program is to inspire, excite, and train our automotive technology students to achieve a valuable place in our local and global community; by serving a widely diverse student population including career oriented students, lifelong learners, and those who choose our program to enrich their own knowledge base. We do this by focusing on integrity, personal achievement, service to our community, and excellence in all we do.

PLO:

Students will be prepared to successfully enter the transportation or industrial maintenance industries and/or continue their education

Response:

Auto Tech students gain much-needed experience in the college's core competencies through their education. Our employers are stressing the importance of communication skills so that technicians can communicate with other employees and customers, through written and verbal communication. Employers also express the need for their employees to be able to find the required information to successfully diagnose vehicle problems, because of the extreme differences in various makes of vehicles. Critical thinking skills have always been a part of the automotive repair industry, even more now with emerging technologies. Our students are also exposed to cultural differences and global concerns through their work at De Anza College and club activities.

I.A.1 What is the Primary Focus of Your Program?: Career/Technical

I.A.2 Choose a Secondary Focus of Your Program?: Transfer

I.B.1 Number Certificates of Achievement Awarded: 26

I.B.2 Number Certif of Achievement-Advanced Awarded: 44

I.B.3 #ADTs (Associate Degrees for Transfer) Awarded:

I.B.4 # AA and/or AS Degrees Awarded: 27

I.B.5 Strategies to Increase Awards : 1) Auto Tech will have substantially more award earners in large part because of the approval of our new General Service Technician (GST) certificate of achievement. The GST certificate is an award for students who complete all auto tech introductory classes and one electrical class, helping these students gain entry-level jobs. The GST certificate is also a stepping-stone to the full-time day program and the evening program.

2) Auto Tech is revisiting pathways with high schools to determine interest in a more effective articulation agreement and is investing SWP funds to help PAUHSD schools by addressing industry needs, providing college and career readiness, and supporting improved teacher training.

3) Auto Tech will also be pursuing new ideas in Guided Pathways. We already have faculty who are very attentive to the needs of our students, but more attention is needed to help students with general education and a clear path to eventually earn certificates, degrees, or transfer.

4) Auto Tech is in the process of reinventing our certificate options in the day and evening to better align with enrollment trends and student needs.

I.C.1. CTE Programs: Review of Perkins Core Indicator and SWP Outcomes

Metrics: Planning for 19-20 based on Perkins Core Indicator Report (indicators 5a and 5B) for Automotive Technology (TOP code 0948): The Auto Tech department has had an 8% female enrollment distribution for the last five years. The majority of this non-traditional enrollment is from our introductory classes. The CTE cohort participation number is considerably lower, which represents the female enrollments from our full-time day program. In order to be counted in this CTE cohort, a student has to participate in 12+ CTE units within three years for courses above the introductory level. We need to work on promoting female students from our introductory classes to persist in the day program or take evening classes, in order to increase the cohort sample size. Auto Tech has seen a dramatic increase in 18-19 female enrollments from the "first-time students" category in the Program Review tool. This seems like a good opportunity to work with this group of students for persistence, because they are coming to us first. Auto Tech is developing plans for research to figure out how to attract non-traditional students and to identify barriers that prevent non-traditional enrollment and persistence.

I.C.2 CTE Programs: Labor Market Demand and Industry Trends :: Employment of automotive service technicians and mechanics is projected to grow 6% from 2016 to 2026, about as fast as the average for all occupations. Job opportunities for qualified jobseekers should be very good. - Bureau of Labor Statistics, U.S. Department of Labor.

Total annual openings in CA is 7,610. - Employment Development Department (EDD) CA. The estimated employment is 74,100. EDD.

At our latest advisory committee meeting on December 18, 2018, our advisory committee was pleased with the overall existing certificate and degree offerings. They were pleased with our new courses such as plugin hybrid and gaseous fuels. They made several recommendations such as a need for increased service writing and management skills. In addition to the employment opportunities through the EDD, auto tech also receives over 200 local employment requests each year. These local requests are not part of any data from EDD or LMI, but substantiate the need for educating automotive jobseekers.

I.D.1 Academic Services & Learning Resources: #Faculty served: NA

I.D.2 Academic Services & Learning Resources: #Students served: NA

I.D.3 Academic Services & Learning Resources: #Staff Served: NA

I.E.1 Full time faculty (FTEF): 9.4

I.E.2 #Student Employees: 2, no change from last year

I.E.3 Ratio % of Full -time Faculty Compared to % Part-time Faculty Teaching: FT teaching percentage is up 6% from last year, PT teaching percentage is down 7% from last year

I.E.4 # Staff Employees: 3, no change from last year

I.E.5 Changes in Employees/Resources: Reduced B budget continues to negatively impact our students. Auto tech lost some library resources that were used by all auto tech students. We lost a free ASE test preparation database with sample questions that students used in preparation for taking the Automotive Service Excellence (ASE) national certification tests, which is a requirement for most employers.

We would like to restore the hours for the evening tool room technician position the way it was prior to 2009. The position as it stood before 2009 was eliminated due to budget cuts.

Reinstating this position would improve the transition between the day and evening job duties, because of the lack of support staff in the evening. Evening students often suffer because of lack of equity in staff support between the day shift and evening shift. Reinstating this position is critical to the overall success of the students and the safe operation of the evening program.

To help with the reduced support in the evening, evening instruction was partially supported by a TEA that was funded by AEBG. This TEA is no longer employed due to changes in the way that the State requires reporting of AEBG. Previously, we hired evening mentors to help evening students with certificate and degree applications, scheduling, and degree path advice. These positions were also not allowed to continue because of classified union conflicts.

II.A Enrollment Trends: 17-18 census enrollment was down 4.3% from 16-17 with a productivity increase of 5.3%, partly due to the department's enrollment management efforts.

For the present school year, there has been an increase in enrollment in each of the first two quarters of the 2018-19 school year. There was a 13% increase in enrollment for Fall of 2018 over Fall of 2017(631 vs. 559) and a 2% increase in enrollment in Winter of 2019 over Winter 2018 (627 vs. 615). As of 3-23-19, our spring 19 enrollment is up 10% compared to spring 18 at census time.

II.B Overall Success Rate: Our success rates are steady at:

82% for 14/15

80% for 15/16

80% for 16/17

II.C Changes Imposed by Internal/External Regulations: Marketing efforts continue in an effort to help increase enrollment. Beginning with Winter 2018, we are mailing fliers to over 3,000 automotive repair shops in the nearby counties. We will continue to mail these marketing fliers each quarter. Faculty have also been to many outreach events at local high schools and adult schools. High schools include Lincoln, Yerba Buena, Palo Alto, Gunn, Fremont, Homestead, Gunderson, Apollo, and the Del Mar high school district. Adult schools include Mountain View/Los Altos, Palo Alto, and Sunnyvale-Cupertino. We have also purchased

marketing items to attend these events such as flags, tents, banners etc. Lastly, faculty have set up booths around the De Anza campus advertising our introductory program. We have done this the last two quarters with great success for the introductory classes that serve all students on campus. With this planned, auto tech will need the flexibility to offer more sections to keep up with the projected enrollment increase.

Recently, the process for approving new certificates, degrees, and curriculum has been frustrating. Our last proposal for a new certificate, which targets underserved students and students preparing for the workforce, took well over a year to be finalized. Since its approval, our General Service Technician (GST) Certificate has had 30 awards in the first quarter. We have also identified 150 students over the last five years who can now apply for this certificate. The idea for this new certificate was to provide students with a relatively short path to a certificate and employment. This GST certificate has become a tremendous success as more students find out about the value of this certificate. New certificates or degrees should not take this long for approval because, as we have proved, the outcomes are immediate.

Another set-back is getting our new non-credit classes in the catalog. We have identified non-credit classes as being a possible way of preventing class cancellation in the evening program and increasing enrollment in record numbers. The process for adding non-credit classes to the catalog is way too lengthy. Even though the campus curriculum group is helpful, the process is slow, confusing, and frustrating. A recent "work-to-contract" added to the delay as the appropriate signatures could not be obtained.

Auto tech has worked through a 50% drop in the B budget over 10 years. Auto tech has struggled through this low operating budget, with broken and obsolete tools, vehicle maintenance, and equipment maintenance/repair. We find it difficult to afford repair parts for our vehicles, which is how our students gain the needed experience.

A recent automotive lift installation project was cancelled. We were set to use SWP funds to purchase and install a flush-mount lift for use in the shop, but were forced to cancel the project due to an absurd quote. The project began in early 2017 with a \$51,000 vendor quote for purchase and installation, and a \$55,200 quote for architecture and engineering. We were also warned that there may be additional "unknown hard costs" not to exceed 25% of the total project. On January 18, 2018 we were notified that the additional hard costs were going to be an additional \$250,000. The total cost to purchase and install a \$35,000 vehicle lift is now \$356,200, a 335% increase from the original quote to engineer and install the lift. We are now forced to settle for an alternative lift that does not require as much engineering, mostly because of the very poor project management and communication. We also purchased a CNG station that cannot be installed due to similar project management problems and the associated costs.

III.A.1 Growth and Decline of Targeted Student Populations: 2017-18 Enrollment: 2017-2018 Enrollment Data:

Auto Tech

African American 2%

Latinx 40%

Filipinx 8%

Pacific Islander 1%

De Anza College

African American 4%

Latinx 25%

Filipinx 7%

Pacific Islander 1%

III.A.2 Targeted Student Populations: Growth and Decline: Enrollment trends of the targeted groups are varied. African-Americans have remained flat with only 2-3% over 5 years. While Pacific Islanders made a large jump from 4 to 18 students, it represents only 1% of our enrollment. Native Americans have been up and down from 0 to 1% over the last five years.

Filipinx has grown 3% over the last five years. The Latinx group has seen a large increase over the last 5 years from 31% to 40%. They are now, by far, the largest group of students in our department. Combined, the targeted student population was 52% of our enrollment for the 17-18 school year.

III.B.1 Closing the Student Equity Gap: Success Rates: 2017-2018 Success Rates

Auto Tech department

- African American: 67%
- Latinx: 76%
- Filipinx: 83%
- Pacific Islanders: 72%
- Asian: 85%
- White: 87%

III.B.2 Closing the Student Equity Gap: Withdrawal Rates: 2017-2018 Withdraw Rates

Auto Tech department

- African American: 14%
- Latinx: 5%
- Filipinx: 6%
- Pacific Islander: 0%
- Asian: 1%
- White: 6%

III.B.3 Closing the Student Equity Gap: 2017-18 Gap: 2013-2014 8%

2014-2015 8%

2015-2016 8%

2016-2017 8%

2017-2018 9%

III.C Action Plan for Targeted Group(s): 1) Hire a bilingual tutor to help students who transition from adult schools within the North Santa Clara County Adult Education consortium.

Point: Dave Capitolo

2) We have hired a female Asian adjunct instructor, a Vietnamese adjunct instructor, a Filipino tool room technician, and a Latino adjunct instructor. For auto tech, these are huge advancements in creating a more inviting environment for students in the targeted groups. We will continue to promote equity within our department. Point: Department

- 3) Contact clubs/groups on campus such as the Men of Color Community to find out why so few African-Americans enter our program. Point: Rick Maynard
- 4) Maintain our Student Success Center to allow students access to computers and Auto Tech tutors. Point: Dave Capitolo
- 5) In process of making all introductory and evening courses available as non-credit to reduce cost and open more opportunities for students who otherwise would not attend college. Point: Dave Capitolo
- 6) Increase outreach efforts at local high schools. Point: Pete Vernazza

III.D Departmental Equity Planning and Progress: Professional Development - Help with non-traditional participation and success rates, tutoring strategies

III.E Assistance Needed to close Equity Gap: Yes

III.F Integrated Plan goals: current student equity data and action plan: 5. Build on and broaden our existing relationships in the high schools and within the community to improve college readiness of entering new students

IV.A Cycle 2 PLOAC Summary (since June 30, 2014): 100%

IV.B Cycle 2 SLOAC Summary (since June 30, 2014): 90%

V.A Budget Trends: Limited B budget prevents us from running our department and being able to purchase the needed parts to repair our fleet of district owned vehicles. The repair of our vehicles is the best way for our students to gain the much-needed experience and boost in confidence. Request restoring our current B budget of \$18,000 back to our 2012 budget of \$30,000.

V.B Funding Impact on Enrollment Trends: Reduced B budget shifts costs to our students. Reduction in B budget also prevent us from purchasing the needed parts and supplies to repair our vehicles, this is a big part of student learning.

V.C.1 Faculty Position(s) Needed: Replace due to vacancy

V.C.2 Justification for Faculty Position(s): The growing need for an alternative transportation fuels technology program. This technology includes diesel, electric / Hybrid, solar fueling, compressed natural gas, and propane. Alternative transportation fuels technologies is a growing segment of the industry and training requirements will increase over the next five years. We would like to increase our job placement percentage to over 90 percent. Starting our alternative transportation fuels technology program now will position us to support industry demands. By equipping our students with alternative transportation fuels technology training we will enhance their ability to compete for jobs in the transportation industry. This training is also recommended by or advisory committee.

Besides the need for faculty to help with alternative fuels, auto tech is currently struggling with the unavailability of Randy Bryant who accepted the position of Dean of CTE and Workforce Development at the college. This is also a challenge now, being down one full-time faculty along with trying to increase enrollment, offer non-credit classes, and grow the department. We will also be losing a second full-time faculty to retirement at the end of 18-19 school year.

V.D.1 Staff Position(s) Needed: None needed unless vacancy

V.D.2 Justification for Staff Position(s)::

V.E.1 Equipment Requests: Over \$1,000

V.E.2 Equipment Title, Description, and Quantity: Details are listed in equipment request spreadsheet.

Upgrade the shop exhaust system (1)
Conductance battery testers (5)
Replacement vehicles as technology changes
New Hunter Hawkeye alignment machine (1).
New Hunter Mohawk alignment machine (1).
New John Bean alignment machine (1).
Transmissions, special tools, overhaul kits, stands
Carts for shop
Brake parts washers
Brake lathe on car
HP Chassis dyno
Electronic shop management software
10 years of subscriptions to factory tools
ASE study guides
Subscription to identifix
Update engine lab with new stationary engines
New steering and suspension training display and cutaway
Battery volt amp load testers
Wire terminal test
Wire terminal servicing tools, crimper strippers
Ignition simulator boards ford, gm, Asian, euro
Headlight aiming equipment
Valve adjusting equipment, engines on stands
Oil extractors
Engine oil analyzer
Air conditioning machine
Automatic parts washer
Spray cleaning cabinet
Bench-top ultrasonic parts washer
Equipment, supplies, & staff development to be determined.

V.E.3 Equipment Justification: This equipment will be used by our Auto Tech students. Without this equipment our students will be less prepared for competition in the automotive industry. Some of the equipment now in place has a life expectancy of 5 to 10 years depending on technology changes. Much of our equipment is over ten years old. This equipment promotes the college mission by getting students jobs.

Shop exhaust system needs to be extended out to the location of where new lifts will be installed. This is needed to keep students from being exposed to harmful exhaust fumes
Conductance battery testers allow students to use battery testing equipment that is being used

in the automotive industry and complete SLOs for Auto 60C

Each year there is a need to newer vehicles for our students to learn some of the new technologies

New alignment machine (Hawkeye) to replace old unit that has reached the end of its service life and is no longer relevant to equipment used by industry. \$31,574. Expected service life, 10-15 years. Price includes shipping, set up, training and taxes. No additional college or state expenses are expected as this is a replacement

New alignment machine (Mohawk) to replace old unit that has reached the end of its service life and is no longer relevant to equipment used by industry. \$30,262. Expected service life, 10-15 years. Price includes shipping, set up, training and taxes. No additional college or state expenses are expected as this is a replacement.

New alignment machine (John Bean) to replace old unit that has reached the end of its service life and is no longer relevant to equipment used by industry. \$29,000. Expected service life, 10-15 years. Price includes shipping, set up, training and taxes. No additional college or state expenses are expected as this is a replacement.

New vehicle lifts to be used with alignment equipment and general service use

New air conditioning machine is required for the system used on all new vehicles (1234 YF)
Automatic parts washer is energy efficient and is a safer water-based cleaning system
Spray cleaning cabinet is rinse booth for cleaning parts and is also a safer water-based system
Bench top ultrasonic parts washer is for cleaning small parts using less detergent because of the high frequency sound waves that do the cleaning

Remainder of the tool requests are all for student success and to be able to use tools and equipment that exposes our students to the latest tools that shops and dealerships are using.

Equipment, supplies, & staff development as a result of core indicator reports and SLO outcomes.

- V.F.1 Facility Request:**
- a. We need to repair the coating on the floor in the main shop and the floor in classroom E12f.
 - b. We need to replace classroom E12e with a new facility.
 - c. A plan to complete an outdoor area for student project completion has also been developed. This will provide additional shelter, lighting, and work space outside in an area not previously completed during a renovation.
 - d. Remodel tool room to make better use of the tool storage.
 - e. Add more parking stalls to the auto tech department.
 - f. Finish updating the workbenches and lockable storage throughout the remainder of the shop space.
 - g. Transmission teardown portable workbenches (10)
 - h. Vehicle lifts (4) are necessary for our chassis students to stay current on the equipment that

is used in industry

i. Install audio and video projector and screen in the main lab for guest speakers, outreach events, and to help with disabilities.

j. Replace inoperative steam cleaner

V.F.2 Facility Justification: a. The floor is becoming a tripping hazard and a slipping hazard during rain. Safety is the justification for this need. The clear coat is peeling up because of water intrusion under the roll-up doors and the man door in the classroom. Awnings and drains are currently being designed to eliminate the leakage, but the floor damage is done. Wet and peeling floors have been a safety concern for years.

b. A new building seems so essential, with so much emphasis being put on the industry need for alternative fuels education. Advisory committees, for several years, have advised us on the importance of a quality alternative fuels program. There are also many opportunities for industry partners, grants, and enrollment that help support this need. This will allow us to add alternative fuel classes as requested by our advisory committee. Preliminary ideas and drawings have been submitted to the Facilities Committee for recommendations that include vehicle charging stations, shop space, and classrooms.

c. This area was compromised due to lack of funding, making the area not usable in for lab work. Student tasks are becoming more difficult to complete in Auto 60E because of the lack of space inside and outside the shop. The competition of the outside work area and an additional lift will help students achieve outcomes.

d. With the recent upgrades in tools, we need more storage space with added security throughout the tool room. A new system of tool distribution and accounting is also needed to prevent tool loss, prevent theft, and streamline the tool check out process.

e. The district recently required auto tech to sell/dispose of over 40 vehicles so that no student parking stalls are used by school vehicles. Auto tech needs to continue to use vehicles for instruction. The need for these vehicles increases as our program expands to cover newer technologies. Additional parking can be created by moving the fence along the north side of auto tech.

f. We need to finish updating all work surfaces throughout the shop that includes lockable storage under the benches. The secure storage is needed with the purchase of new tools and equipment through other grants

g. Transmission workbenches: Old benches are worn out from 20 years of use. \$9,500 incl tax and shipping

h. Vehicle lifts are necessary for our chassis students to stay current on the equipment that is used in industry

i. This projector and screen will help us host some guest speakers, outreach speakers, industry speakers, and also with certain learning disabilities by being able to display tasks on a large

screen

j. Steam cleaner is necessary for diagnosis and repair of fluid leaks, identification of fluid leaks, and is required for engine and transmission service and repair. Applicable to Auto 50, 63, and 64 class series.

V.G Equity Planning and Support: We have paid for our equity work from our B budget. Increase B budget.

New tables and chairs would help make the student success center more inviting and comfortable for the students being tutored

We would like to continue to hire student tutors for our success center using any funds available.

Hire evening support staff for tutoring and mentoring

V.H.1 Other Needed Resources: Tutors, bilingual tutors, evening mentors

Vehicle fluids for school vehicles

Repair parts for school vehicles

Paper and printing for student resources

Shop abrasives and fluids

Shop detergents and cleaning abrasives

Measuring tools

Hand tools

Program marketing help and creating marketing materials

Social Media marketing help

Program give-aways for outreach

Concrete contractor to inspect damaged shop floors and provide estimate

Fuel

AllData subscription

ShopKey subscription

Identifix subscription

iATN membership

AERA membership and ProSIS Pro subscription

Report on US ADAS and Safety Trends

Tutors/Mentors

Professional conferences and travel expenses

V.H.2 Other Needed Resources Justification: Tutors and mentors help to improve success rates

Fluids and parts help keep school vehicles in working order for student learning

Paper and printing is important for students to have repair procedures while working on projects

Shop abrasives and fluids are needed for students to complete lab tasks

Detergents and abrasives are needed for safe cleaning of engine parts

Replacement tools to replace broken or worn tools

Marketing and marketing materials are critical to program expansion and increasing enrollment

Shop floors have been damaged by rain water and is a hazard

Vehicle fuel required for instruction

Service information software subscriptions have replaced service manuals and is vital for instruction

Advanced Driver Assistance Systems (ADAS) is an emerging technology that faculty need training in

Tutors and Mentors to improve student success

Conferences and travel for staff development in areas like increasing non-traditional participation/completions and guided pathways

V.J. "B" Budget Augmentation: Restoring our B budget would help to increase our student success rate in targeted populations by providing needed equipment and supplies. After fiscal year 2012, our B budget was reduced from \$30,000 to \$18,000. Restoring to this previous amount will allow our students to gain more experience by repairing our district owned vehicles.

V.K.1 Staff Development Needs: Faculty will need to be trained on alternative fuels. These fuels include: Electric, Hybrid, Compressed Natural Gas, Propane, and BIO diesel. Auto Tech faculty also benefits from annual professional development, which is a requirement to be NATEF certified. This directly promotes the ICC - Global, cultural, social and environmental awareness.

V.K.2 Staff Development Needs Justification: This training is recommended by or advisory committee and is a mandatory requirement to continue to be NATEF certified.

V.L Closing the Loop: We will continue to monitor success rates for both targeted and non-targeted students. We will also track job placement rates and earnings, including increases in earnings. Our success rates and job placement rates are among the best in the state. We will continue to assess the program outcomes with alumni surveys, that will provide data to supplement SWP and core indicators.

In a recent survey of former students, the percentage of the respondents that are still working in the industry is 88%. 55% of the respondents are still taking auto tech classes. 93% agreed that the skills they learned at De Anza were adequate for work.

Last Updated: 03/23/2018

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