

Automotive Technology

Program Review 14-15

One College Drive
Blythe, Ca 92225

EXECUTIVE SUMMARY

AUTOMOTIVE

The Automotive Technology program is serving an important community need providing students with marketable skills. The need is reflected in the stable enrollments in the program. The new Technology Building and updated scheduling process has improved the efficiency of the course offerings and the student's ability to complete in a timely manner.

The program has also distinguished itself by establishing and maintaining industry partnerships. The benefits include not only supplies and equipment to the program but also exposure to cutting edge research and technology within the automotive industry.

The faculty will be updating the A.S. degree in consort with the Advisory Committee in order to bring the degree requirements more in line with student and industry needs. The faculty will also be working with the local industry to develop more opportunities for on-the-job training.

Part 1: Mission

State the purpose of program.

The purpose of the Automotive Technology Program is to provide students with the necessary skills to work in an ever-expanding field. To this end, the Automotive Technology Program provides students with basic, entry-level skills, professional development opportunities for working technicians, and certification and degree options.

Associate of Science (Occupational) Automotive Technology

The Associate of Science in Automotive Technology is a two-year course of study designed to prepare students intending either to continue study at a technical school, or to enter the workforce. The Associate of Science Degree in Automotive Technology includes general education courses in English, Math, Speech, History, and Health that are, for the most part, articulated within the CSU system, and some are UC articulated as well, making them transferable within the State of California. Non-substantial changes are being made to the associate's degree at this time.

Certificate in Automotive Technology

The certificate in Automotive Technology is an 18 unit course of a study designed to prepare students with the theory and practical skills necessary for entry-level employment as automotive mechanics. Students will learn the operation, maintenance, and repair of all types of automobiles.

Certificate in Automotive Fabrication

The certificate in Automotive Fabrication is a 16 unit course of study designed to prepare students with the theory and practical skills necessary for entry-level employment in the automotive fabrication industry. Students will learn the basic skills necessary for fabrication of safety cages, suspension set up, engine tuning and overhaul.

Certificate of Preparation

**in process of being approved*

The certificate preparation will be a three course automotive technology certificate program. Each course will focus on the theory of automotive technologies as they relate to various aspects of the modern automotive industry. These critical thinking courses require students to conceptually diagnose problems as they relate to automotive technology prior to working on a vehicle.

In addition to the desirability of the degree and certificate programs, individual AUT courses provide students with practical skills.

Describe how the program supports the overall mission of the College as adopted by the Board of Trustees.

The program supports the overall mission of the College by providing high quality programming in a particular vocational area. AUT courses provide an opportunity for lifelong learning in that they offer the opportunity for professional development and certification to working technicians. In addition, the Automotive Technology Program offers training that is career oriented and supports the mission "Palo Verde College provide an exemplary learning environment with high quality educational

programs and services. It promotes student success, lifelong learning and community development. Our goal is to create better futures for our students and our communities.”

Describe the unique institutional goal the program achieves.

College’s Institutional Goal #1: *“Palo Verde Community College District will deliver and continuously improve upon quality educational programs, emphasizing student learning leading to certification, conferral of associate degrees, transfer to four-year institutions, and personal growth and career enhancement.”*

The program satisfies this institutional goal by providing technical education in the trades. Without the Automotive Technology Program the College would not be able to provide the necessary range of technical and vocational training to students intending to enter ever-expanding, in-demand fields. This division supports Institutional Goal #1, by providing a comprehensive program of study, including Certificates of Preparation and Achievement, as well as an Associate’s degree in Automotive Technology. Each of these degrees and certificates have been developed in accordance with Career Technical Education Standards leading toward gainful employment, higher education, and career readiness.

Part 2: Accomplishments in Achieving Goals Outlined In the Previous Program Review

Describe progress in achieving goals outlined in the previous program review, providing evidence documenting such achievements.

The Automotive Technology Department identified the following items that were to be addressed by the division. Refining course outlines and updating certificate and degree programs were identified as a previously listed departmental goal. In addition, SLO creation and assessment were also identified as a goal.

Goals from previous program review:

- The Automotive Technology Department has identified measurable SLOs for every Automotive course, certificate, and degree. In addition, each courses has program and institutional learning outcomes mapped. This has been an ongoing process at the duration of each semester.
- The Automotive Technology Department has also updated curriculum and designed new curriculum leading to a certificate of preparation in Automotive Technology.

Explain modifications of goals outlined in the previous program review, providing evidence documenting such modifications.

To date, there has been no need to make significant modifications to the program.

Part 3: Populations Served

Describe the populations served by the program, including special populations.

The Automotive Technology Program is open to all interested Palo Verde High School, Twin Palms High School, Palo Verde College students, and students enrolling in correspondence education including incarcerated students. During the day, the program serves both high school students and

adult students at a ratio of 50/50; during the evening, the program serves a larger number of adult college students.

All Perkins funded CTE Programs have core indicators which are negotiated with the Chancellor's office which relate to Non-traditional and special population students.

Describe other populations that should be served by the program, and describe plans to serve them in the future.

While the Automotive Technology Program does serve students of varying needs and interests, ideally, the program would enroll a greater number of adult students. The Automotive Program will continue to serve incarcerated students through the new courses and certificates designed for these students.

Part 4: Curriculum History

List the courses constituting the program.

Associates in Science: Automotive Technology

Requirements	Dept. Name/#	Title	Units
Required Core (30 units)			
	AUT 100	Intro to Automotive Technology	3
	AUT 101	Basic Technician Skills	3
	AUT 102	Engine Analysis/Tune-up	3
	AUT 103	Suspension, Steering, & Alignment	3
	AUT 110	Brake Systems	3
	AUT 111	Automotive Electrical Systems	3
	AUT 200	Engine Diagnosis/Overhaul	6

Automotive Technology Electives

(Choose two additional courses from the list below)

	AUT 107	Beginning Automotive Technology	3
	AUT 108	Engine Performance, Heating and Air Conditioning	3
	AUT 109	Brakes, Suspension, Steering, Drive trains, and Transmissions.	3
	WEL 102	Basic Gas Metal Arc Welding	3

Total Required Units: 30

Certificate of Achievement: Automotive Technology

Course	Title	Units
AUT 101	Basic Technician Skills	3
AUT 102	Engine Analysis/Tune Up	3
AUT 110	Brake Systems	3
AUT 111	Automotive Electrical Systems	3

**Automotive Technologies Electives –
(Choose a minimum of 6 units from the list below)**

AUT 100	Introduction to Automotive Technology	3
AUT 103	Suspension, Steering & Alignment	3
AUT 113	Standard and Automatic Power Trains	3
AUT 200	Engine Diagnosis/Overhaul	6
AUT 212	Automotive Air Conditioning	3

Total Required Units 18

Certificate of Career Preparation: Automotive Fabrication

Course	Title	Units
AUT 103	Suspension, Steering & Alignment	3
AUT 200	Engine Diagnosis/Overhaul	6
WEL 102	Basic Gas Metal Arc Welding	3
<i>*choose four units from below</i>		
AUT 090*	Automotive Fabrication & Set-up	2
AUT 091*	Automotive Racing Fabrication	2
AUT 092*	Automotive Driving Techniques & Awareness	2

Total Required Units 16

Certificate of Career Preparation

**In process of being approved*

Course	Title	Units
AUT 107	Beginning Auto Technology	3
AUT 108	Engine Performance, Heating & Air Conditioning	3
AUT 109	Brakes, Suspension, Steering, Drive & Transmission	3

Total Required Units 9

Of the courses constituting the program, list those courses that have not been successfully offered at least once during the preceding six (6) semesters.

All courses in the program are offered within a two-year time frame.

Explain why such courses were not successfully offered. Provide a strategy for improving their success, or explain why they should not be removed from the program.

All courses are currently being offered on the two-year cycle.

Part 5: Course Scheduling and Availability

Describe how effectively the scheduling process of classes in the program:

Optimizes class availability for day students, evening students and distance education students.

Within the Automotive Technology Program, courses are scheduled at times that allow appropriate instructional methodology. At this time, day courses are scheduled on a Monday, Wednesday, Friday and Tuesday, Thursday, Friday in two- hour blocks to meet the needs of students. This meets the needs of that student population better than the one-hour, 5 day a week block from years past. The night classes are offered in two and a half hour blocks to accommodate the schedules of adult students, the primary enrollees in these courses. Courses are also offered through the correspondence modality to accommodate incarcerated students and students with scheduling conflicts.

Optimizes student learning.

Within the Automotive Technology Program, courses are adequately sequenced for day students. The Automotive Technology faculty, in developing a schedule of classes, adhere to the department's two-year plan. A core sequence of courses is offered each semester, and elective courses that students, given high-quality advising and appropriate preparation, will be able to complete the program within the two-year cycle. Courses have all been updated through the curriculum committee

with SLO's identified. Through this process student learning can now be assessed, modified, and improved.

Part 6: Student Learning Outcomes

Describe the process by which the program identifies, measures and evaluates student learning outcomes at the course, program and degree levels, and provide evidence that this process is being followed.

The Automotive Technology Department has identified SLOs for each course, certificate, and degree that it offers. The Vocational Department constituents meet regularly to discuss Student Learning Outcomes, Assessment tools, best practices, and issues relating to SLO assessment.

The Automotive Technology instructor was one of the first programs to successfully assess SLOs. Although during this time, there has been significant changes in the methods of data collection, assessment, and analysis. These changes have occurred because of changes in SLO Leaders and changes in Administration. Presently, the Automotive Technology Department attends all SLO training in-service events, and conforms to the standards of SLO Analysis, and PLO and ILO mapping as set forth by the Palo Verde College Administration (2014-present).

Describe the process by which program improvements are made, and provide evidence that this process is being followed.

The Automotive Technology faculty with recommendations from the advisory committee has taken measures to ensure that courses reflect the skills that working professionals need. The training offered within the program focuses on one topic per course per semester. This modular curricular organization by nature discourages duplication. While concepts are often reinforced from one class to the next, students work toward a new skill set for each class in the program.

Part 7: Program and Course Coverage

Describe how effectively courses in the program are covered by:

Full-time Faculty.

The Automotive Technology Program is staffed by one full-time faculty member.

Describe ongoing or projected deficiencies in faculty coverage of courses in the program.

None.

Describe plans to improve program and course coverage, if applicable.

Currently other CTE faculty cover courses on a as needed basis.

Part 8: Professional Development

Describe specific professional development activities in which faculty members in the program participate, and explain how such activities benefit or enhance the program and support and facilitate student learning outcomes.

Instructors routinely participate in professional development in terms of continuing professional education and seminars. The Automotive faculty has completed additional coursework in the subject area, at PVC. This training has allowed for skills updates in an ever-changing field. The faculty's continuous attention to professional development ultimately helps students by providing them a highly skilled and highly qualified faculty. The full time faculty has completed the Automotive Technology Certificate at PVC and is working on the Welding Certificate.

Instructors regularly attended new product seminars presented by leading industry equipment manufacturers. The new cutting-edge equipment purchased by the faculty and advisory committee is due to their attention to trends in the industry. For example, the faculty purchased Matco AC recovery, charge machine, specialty tools for suspension repairs, new battery chargers, and test equipment.

Staff of the Automotive Technology Program regularly participate in in-service activities, including College Flex Day trainings, College seminars, Palo Verde High School seminars, and other professional growth opportunities offered on campus as time permits. Every year the Automotive Technology Program participates in Career Day on the Palo Verde College main campus, and the Palo Verde College information booth and displays at the Colorado River County Fair.

Sexual Harassment training has also been completed during this program review cycle.

Describe areas of unmet professional development needs among faculty in the program, if applicable, and outline plans to address those needs.

No unmet professional development needs have been identified at this time.

Part 9: Student Performance and Completion

Display and comment on semester-by-semester course completions in the program over the preceding six (6) semesters.

2011 - 2014 Automotive Technology Course Completion

	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Summer 2014
Total Students	113	83	114	78	110	123	40
Students C/P or better	98	63	86	70	104	96	35
% Completion C/P or better	86%	75%	75%	89%	94%	78%	87%

It is evident that students pursuing courses in this discipline are finding success. Traditionally most of the courses offered by the Automotive Technology department are face to face, new courses are going to be developed for distance education modalities. We believe that student success in these courses is due to the fact that many of the registered students are high school students who enroll in college course during their

traditional school day. These students traditionally have much better attendance than their traditional college counterparts. For this reason, students are able to be present for the instruction and assignments that lead to successfully obtaining the skills necessary for passing a course and demonstrating success on SLO assessments.

We have found that student success remains relatively equal regardless of academic year or term.

2011 – 2014 Automotive A.S. Degree and Certificate Completion Data

ID	Degree/Cert.	Description	2011 - 2012	2012 - 2013	2013 - 2014
AUT	Automotive Technology	Associate of Science	-	-	2
AUT	Automotive Technology	Certificate 18.0-29.9 units	6	10	12
AUT FB.	Automotive Fabrication	Certificate 6.0-17.9 units	2	1	1
Total			8	11	13

There has been a continued rate of growth in certificate and degree completion in the Automotive Technology Department. During the 2013-14 academic year, there were two students obtaining an AS degree and the number of certificates conferred for the Certificate of Achievement doubled during 2011-2014. The Automotive Technology Department has constantly updated its curriculum, textbooks, and meets regularly with the local education agencies (LEAs). Through the continued correspondence with Palo Verde High School, the automotive technology department has gained consistent enrollment of concurrently enrolled high school students. The department believes that the consistent certificate completion is solely due to the consistent enrollment of Palo Verde High School students. The Automotive Technology department expects to see more program completers in the next program review. This will be in part to the new curriculum that has been developed leading to a certificate of preparation in welding technology. These courses have been developed for the distance education modality.

Part 10: Enrollment and Financial Trends

Display and comment on year-by-year enrollments in the program over the preceding six (6) semesters.

Spring 2012		Spring 2013		Spring 2014	
Course	Enrollment	Course	Enrollment	Course	Enrollment
AUT 090-01	11	AUT 090-01	10	AUT 102-01	23
AUT 102-01	23	AUT 102-01	24	AUT 103-01	21
AUT 103-01	23	AUT 103-01	19	AUT 107-01	23
AUT 113-01	10	AUT 113-01	11	AUT 200-01	19
AUT 200-01	16	AUT 200-01	14	AUT 290-01	16
Total Spring 2012	83	Total Spring 2013	78	AUT 107-01	25
				Total Spring 2014	127

Fall 2012		Fall 2013		Fall 2014	
Course	Enrollment	Course	Enrollment	Course	Enrollment
AUT 090-01	11	AUT 090-01	14	AUT 092-01	17
AUT 100-01	22	AUT 100-01	20	AUT 100-01	19
AUT 101-01	28	AUT 101-01	20	AUT 101-01	17
AUT 110-01	23	AUT 110-01	24	AUT 110-01	14
AUT 111-01	24	AUT 111-01	20	AUT 111-01	15
AUT 212-01	10	AUT 212-01	10	AUT 107-01	26
Total Fall 2012	118	Total Fall 2013	108	AUT 107-02	15
				Total Fall 2014	123

Enrollment in the Automotive Courses over the past six semesters has been strong. What we have found is that there is not a lot of students beginning the course and quitting during the middle of the semester. Though this does occur, having a large concurrently enrolled high school population helps keep students involved from start to finish. Enrollment trends demonstrate that students are still enrolled in all levels of courses in this discipline.

Display and comment on year-by-year expenses incurred by the program over the preceding five (5) years, as to: supplies, contracts, capital outlay and other non-salary expenses.

	Salaries	Benefits	Supplies	Contracts	Capital	TOTAL				
							FTES	Rate	Income	Profit
2013-2014	\$110,401	\$16,853	\$12,047	\$ 15	\$ 3,107	\$ 142,423	45.67	\$ 4,564.83	\$ 208,475.78	\$ 66,052.78
2012-2013	\$93,827	\$27,181	\$12,346	\$ 516	\$ 3,423	\$ 137,293	39.83	\$ 4,564.83	\$ 181,817.17	\$ 44,524.17
2011-2012	\$97,047	\$30,103	\$18,647	\$ 975	\$ 6,271	\$ 153,043	37.33	\$ 4,564.83	\$ 170,405.10	\$ 17,362.10
2010-2011	\$-----	\$-----	\$-----	\$-----	\$-----	\$-----	44.81	\$ 4,564.83	\$ 204,550.03	\$-----
2009-2010	\$100,707	\$25,490.04	\$ 27,097.92	\$ 40.00	\$ ---	\$ 191,113.29	42.16	\$ 4,564.83	\$192,453.23	\$ 1,339.94

*Information for 2010 – 2011 was not obtained after request

The partnership with Lucas Oil has provided \$20,000 - \$25,000 in supplies for the PVC Automotive students as well as the maintenance of all PVC vehicles.

Part 11: Faculties and Equipment

Are current facilities, such as classrooms, offices and equipment, adequate to support the program? Explain.

The Palo Verde College Automotive Technology Department, in conjunction with the Welding Technology Department are requesting use of the TB 117 classroom when it is vacant of the Building Technologies Program to support the growth of the program and to meet the needs of the local employment agencies and the local trade advisories. For this reason, the automotive technology advisory committee requests students who are trained in engine overhaul using trade and industry expectations (dust-free environments).

The facilities, occupied since Fall of 2007, located on Palo Verde College Campus meet the needs of the Automotive Technology Program. With the exception of the suggestion made by the Advisory Committee.

Is available dedicated space adequate to support the program? Explain.

The facilities available support the program at its current capacity, but additional space would be required to grow the program as recommended by the local employment agencies and trade advisory members.

Is available equipment adequate to support the program? Explain.

Palo Verde College has historically been very supportive of the Automotive Technology Program in terms of equipment. All equipment is adequate to support instruction

Describe plans for future changes in support facilities or equipment.

Clean room, a section of room TB117 to be used specifically for AUT 200 to rebuild engines.

Part 12: Strengths and Weaknesses

List and comment on the major strengths of the program.

The Major strengths of the department are as follows:

- The construction of the phase 2 vocational Technology Building with state of the art facilities, classrooms and equipment provides the PVC student and optimal learning experience.
- Students participating in program classes are prepared for certification, and employment, in a highly technical, in-demand field.
- Automotive faculty are flexible and adaptable, looking for opportunities to design and offer classes to meet student, community, and employee needs.
- Automotive faculty has a record of carefully sequencing program courses, ensuring that entering students can complete the program according to a reasonable timeline.
- \$66,150 has been raised for scholarships for Automotive Technology Program students wishing to pursue further education, either at trade schools or colleges.
- The partnership with Lucas Oil has provided \$20,000 - \$25,000 in supplies for the PVC Automotive students as well as the maintenance of all PVC vehicles.
- The partnership with the I-10 Speedway has provided a hands-on training experience for PVC students.
- Automotive Technology courses are directed toward the Automotive Technology Certificate and Degree and meet ASE standards.
- Course Outlines are updated on a regular basis to meet the industry and ASE standards.

- Advisory Committee meetings are held on a regular basis to obtain direction on equipment purchases and keeping classes updated.
- Enrollments are steady.
- Purchased new textbooks and workbooks.
- A full time councilor has been hired to meet the needs of the automotive students.

List and comment on the major weaknesses of the program.

Departmental weaknesses include:

- Limited community business support for on-the-job training.
- Lack of A.S. degree completers.
- I-10 Speedway closure

Part 13: Plans to Remedy Weaknesses

Identify specific steps to correct identified weaknesses and provide the timeline by which they are to be corrected.

- Aggressively market an internship program to the business community.
- Trend with Palo Verde High School students should help increase AS degree completion. This would involve continuing to offer Automotive Technology courses to Palo Verde High School students, and to continue to promote retention of high school students so that they can earn one or more certificates prior to graduation high school.
- The only way to remedy the I-10 speedway closure, is to have an outside agency such as Palo Verde College donate the money (roughly \$60-70,000) to repair the track and re-establish the powerful connection that the PVC Automotive & Welding Department, Lucas Oil, I-10 Speedway, and members of the community have.

Part 14: Plans To Advance the Program

Describe other plans that will advance the program.

- Continue to update A.S. Degree as needed
- Continued partnerships with Lucas Oil and I-10 Speedway and other business partnerships.
- Research is being conducted on getting ASE certifications in the Automotive field available for students
- Use a section of TB 117 as a clean room for AUT 200, to tear down and rebuild engines when it becomes available.
- Continue assessing, revising, and updating SLO's, PLO's as they relate to institutional Learning Outcomes.
- Approval of Automotive Certificate of Preparation.