PORTLAND COMMUNITY COLLEGE

AUTOMOTIVE SERVICE TECHNOLOGY

PROGRAM REVIEW 2009

1. Program/Discipline Goals

What are the educational goals/objectives of this program/discipline? Have they changed since the last review, or are they expected to change in the next five years?

The Automotive Service Technology program's goals are to prepare students to enter the automotive service and repair industry as an apprentice level technician. Students will learn how to make ethical decisions about repair and service needs for customers, write repair orders, prepare estimates, perform the diagnostics and repair, and communicate recommendations and repairs to customers.

Place the Program/Discipline within the context of the institution. Describe how the college's Mission, Values and Goals are addressed

The Automotive Service Technology program offers all students that have a desire to learn a professional technical trade in the automotive field an opportunity to fulfill their dreams. We have students who represent all ages (16 and above), races, cultures, economic levels and backgrounds. Students get an opportunity to learn lifelong skills in diagnosing and repairing vehicles. They also learn to communicate with fellow classmates, instructors, and customers through verbal, written and electronic means. This interaction component of their learning outcomes gives them the practice needed to help develop their human relations skills. Writing and preparing repair orders helps the students understand the business side of the industry while giving the student a chance to practice and reinforce their computation skills.

2. Curriculum: reflect on the learning outcomes and assessment, teaching methodologies, and content in order to improve the quality of teaching, learning and student success.

Evaluate the curriculum using national and/or professional program/discipline guidelines where available.

The Automotive Service Technology program completed evaluation by NATEF (the certifying body for automotive secondary and post secondary programs) in July 2005.The NATEF evaluation team recommended an unconditional certification for another five years. In June 2008 our advisory board successfully completed a midpoint compliance review. Our next full review will be in July 2010.

In May of 2009 Steve Smith made us aware of a recently discovered long standing problem of contact hours in relation to credit hours and faculty workload. This will be a very complex issue to resolve. We may need to change our current four module schedule if we want to address these concerns. This will require the SAC to possibly restructure the entire program. We know that this is an important issue but realize it cannot be fixed overnight. The SAC will address this in the coming year and develop a solution that will address the concerns and be as little impact on our current students as possible.

Identify and explain changes that have been made to course content and/or course outcomes since the last review.

The Automotive Service Technology program's course outcomes have not changed since the last review. We are adding hybrid curriculum to our program in the Fall of 2009. As these changes are made the SAC will determine if additional course outcomes or outcome changes need to be made. We believe most (if not all) of our outcomes will remain the same.

Assessment of course outcomes:

Are assessments that address the course outcomes described in the Course Content and Outcome Guides (CCOGs)?

Yes

Describe evidence that students are meeting course outcomes.

The Automotive Service Technology program students perform 240 hours of Co-Operative education. Employers evaluate students performance in the co-op handbook that the student and employer complete. Students also perform a self

evaluation on each worksheet and reflect on what they have learned. These evaluations show us that the students are meeting the course outcomes.

Identify/give examples of assessment-driven changes made towards improving attainment of course-level outcomes

The Automotive Service Technology program students prepare and present written and verbal presentations on current industry technology changes. These reports are assignments in several of our courses. Students also prepare and present written repair orders for internal, external customers and course work. These changes have been made to meet embedded related instruction requirements. Examples can be found in our embedded related instruction file.

Assessment of College Core outcomes

Describe how courses in the program/discipline address the College Core Outcomes.

Automotive Service Technology program students demonstrate Portland Community College Core Outcomes through the completion of various activities, lectures, and interaction with fellow students, staff, instructors, and customers. Students practice many forms of communication in the process of completing their courses. Course lectures and written reports often times focus on how environmental and community responsibility impact and effect the automotive industry. Students use a variety of information sources and testing procedures to evaluate and diagnose problems with vehicles. These vehicles offer a chance to help them develop critical thinking and problem solving skills. In the process of working on various kinds of vehicles students work with many different "lab partners". These working relationships help the students develop cultural awareness and respect for other individuals at school and in the workplace. Co-Op allows the student the opportunity to practice and demonstrate their professional competence. Each task the student documents in their Co-Op book allows them the opportunities to self reflect on their performance and evaluate how to improve their skills.

Please revisit the Core Outcomes Mapping Matrix for your SAC and update as appropriate.

The Automotive Service Technology SAC will update this document before the end of the school year.

What strategies are used to determine how well students are meeting the College Core outcomes?

The Automotive Service Technology SAC are constantly updating information within the program to reflect current issues and standards as they relate to automotive curriculum and the communities, cultures, and industry we serve. We get current industry feedback and information from our advisory board. We use the advisory board to help determine the changes that need to be made. Students perform program evaluations when completing their Co-op workbook. These evaluations are a helpful tool to see the program form the student perspective.

Describe evidence that students are meeting the Core outcomes

Co-Op workbook evaluations.

Related Instruction documentation.

Students written / verbal periodical reports.

Describe changes made towards improving attainment of the Core outcomes.

The Automotive Service Technology has added more periodical reports to their courses. The repair order that students use has become an important tool in teaching students these core outcomes.

To what degree are courses offered in a Distance modality? Have any significant revelations, concerns or questions arisen in the area of DL delivery?

The Automotive Service Technology program is heavily reliant on the student participating in hands-on activities. This curriculum is not a candidate for Distance Modality. We are however adopting a new text book in Fall 09 that will have an electronic access component. This will allow our students to do homework and class projects on line in a web based format.

Has the SAC made any curricular changes as a result of exploring/adopting educational initiatives (e.g. Service Learning, Internationalization of the Curriculum, Inquiry-Based Learning)? If so, please describe.

No.

3. Needs of Students and the Community: are they changing?

What is the effect of student demographics on instruction, and have there been any notable changes since the last review?

The Automotive Service Technology program has seen a trend in recent years toward younger students. New student courses are increasingly populated with students in the 18 – 25 year old range. This trend has required instructors and our advisor to sometimes adjust methods, expectations, and practices.

Has feedback from students, community groups, transfer institutions, business and industry or government been used to make curriculum or instructional changes? If so, describe.

The Automotive Service Technology program has received feedback from our advisory board that represents the community. This feedback has led to improvements in our Co-Op handbook and the development of our hybrid curriculum. We have also established a tentative agreement with OIT (Oregon Institute of Technology) on an articulation agreement that will allow our students to work to achieve a BS Degree in Operations Management.

Describe current and projected demand and enrollment pattern. Include discussion of any impact this will have on the program or discipline.

The Automotive Service Technology program expects demand for technician positions to remain much larger than the state wide average. Significant job openings in Oregon and the nation are projected to grow (see OLMIS and U.S. Department of Labor Statistics report). This outlook has kept the program full. We anticipate that this trend will continue into the foreseeable future. The automotive repair industry is usually not impacted during an economic downturn. Customers often times choose to repair vehicles rather than replace them when the economy is struggling.

The General Motors Automotive Service Education Program expects an initial drop in demand for entry level technicians for GM Dealerships. The current feeling among local area dealers is with GM not renewing franchise agreements there will be an abundance of skilled technicians in need of jobs. It is the belief of the GM ASEP program that entry level apprentice technicians will be in demand once more as technology increases rapidly. The introduction of Hybrid, Hydrogen, Plug-in electric and advanced gasoline and diesel technology will necessitate highly skilled entry level workers with a solid base of technical skills beyond what the industry currently has in supply.

What strategies are used within the program/discipline to facilitate access and diversity?

The Automotive Service Technology program is an official Program of Study with the Oregon Department of Education. Because of PCC's reputation and accessibility our program has traditionally been very diverse. We have established working relationships with local high schools that have automotive programs. Our activities with these programs include articulation agreements, career day visits, equipment donations, and continuing education classes for instructors. We have instructors, an advisor, and students who attend or are members of the Association of Women in Automotive.

Our program has set our prerequisites high enough to ensure student success but at a level that is very achievable for most applicants. These prerequisites are for Reading 90, Writing 90, and Math 60 based on COMPASS, or ESOL testing into level 8. Weekly group advising sessions and shop tours provide opportunities to welcome prospective students from all backgrounds. The program's Perkins Advisor and instructors work diligently to accommodate student needs.

Identify operational challenges faced by the SAC that impact student learning (e.g., faculties, faculty, other resources).

The Automotive Service Technology program struggles each year to meet student needs. We provide a service to customers who bring their car in for students to repair. These cars provide the students with real world learning opportunities. The challenge is the rising costs of parts and materials. The customer having the work done pays the college for the parts and materials supplied during the repairs but the money goes into the college general fund. The result is that by the time the spring term rolls around each year we have a problem offering the customer a repair service where we can afford to repair their car. Often times we have the customer go and buy the parts so that we can perform the repair. This adds time and parts problems to an already difficult situation.

This same challenge is reflected in what the department needs in the terms of equipment. As cars become more and more complex with advanced computer systems running them, the tools and equipment to repair them continues to get more expensive. We have been fortunate in the past to be aligned with General

Motors. This relationship has allowed us to acquire vehicles and equipment that we otherwise could not have afforded. Now with that relationship gone in some respects we are concerned with how we will continue to keep updated with current technology tools, equipment, and cars.

Finally, the next few years will see a quantum leap in technology in the car industry. We have already begun to make changes and gear up for hybrid vehicles. Our next challenge is to prepare to teach plug-in cars technology. These new technologies require more vehicles, new equipment, and additional instructor training, none of which will be cheap.

All of these issues impact the students in what they will need to know to work in the industry and how effective their time is when working in the shop. These activities are necessary for them to meet the course outcomes of current classes and those technologies they will be learning about in the future.

4. Faculty: reflect on the composition, qualifications and development of the faculty

Provide information on:

Rationale for the size, distribution and composition of the faculty in the subject area.

The Automotive Service Technology program classes are presented in a modular format. We have seven full time instructors that teach 92% of all the courses taught each school year. The other 8% are picked up by part time instructors.

Quantity and quality of the faculty needed to meet the needs of the program/discipline.

The Automotive Service Technology program has enough instructors to meet the current needs of the program. We have a diverse, well trained, and experienced faculty that are respected by the students and the industry we serve.

Extent of faculty turnover and changes anticipated for the future.

The Automotive Service Technology program does not anticipate any changes in personnel in the next five years.

Extent of the reliance upon adjunct faculty and how they compare with full-time faculty in terms of educational and experiential backgrounds.

The Automotive Service Technology program has a qualified staff employee who can fill in as a part time instructor as needed. We also have four instructors that retired in the last eight years that have helped fill in when needed. All of these part-time instructors do a good job.

How the faculty composition reflects the diversity and cultural competency goals of the institution.

The Automotive Service Technology faculty reflects the diversity that is seen in our industry.

Report changes the SAC has made to instructor qualifications and the reason for the changes.

No changes have been made.

How have professional development activities of the faculty contributed to the strength of improvements? If such activities have resulted in instructional or curricular changes, please describe.

The Automotive Service Technology faculty is required to complete 20 hours of continuing education in our field of expertise each year to meet NATEF requirements. Our instructors usually exceed those standards. During this year each of the faculty and our part time instructors have completed over 50 hours of hybrid education courses. These classes have been necessary for us to develop the hybrid curriculum we will incorporate into our classes starting Fall 09. These courses are in addition to our regular continuing education classes that we have attended.

5. Facilities and Support

If classroom space, computers/technology and library/media, laboratory space and equipment impact success, please describe.

The Automotive Service Technology program classroom and shop laboratory space limits the number of students who may enroll and still receive quality instruction. Our lab activities are heavily reliant on students being able to access vehicle data. We are also starting a new text book in Fall 09 that

incorporates online resources for the students. Our current number of computer terminals barely meets our needs. We will need to double the number of student access terminals in the next two years.

Describe how students are using the library or other outside-the-classroom information resources.

The Automotive Service Technology student is introduced to the library in their first course (Introduction to Automotive Technology). They complete a lab project that helps to familiarize them with what the library has to offer. As the students attend other automotive courses many of them use the library as a resource for their periodical reports. The department also keeps several copies of our text book in reserves for the students to use if they need them.

Provide information on clerical, technical, administrative and/or tutoring support.

The Automotive Service Technology works with a division dean clerical support person. A Perkins Fund student advisor provides problem solving help for students dealing with academic issues, learning issues and personal issues. Instructors provide technical help and support to students during office hours or by appointment. Tutoring in Reading, Writing, and Math is available at the campus Student Success Center.

Provide information on how Advising, the Office for Students with Disabilities and other student services impact students.

The Automotive Service Technology program has a full time Perkins Advisor who facilitates retention activities and prepares new students for success. This advisor coordinates and supports students working with OSD, VOC REHAB, PCC Counselors and other academic advisors that work with students to address issues.

6. CTE Programs only : to ensure that the curriculum keeps pace with changing employer needs and continues to successfully prepare students to enter a career field.

Evaluate the impact of the Advisory Committee on curriculum and instructional content methods, and/or outcomes.

The Automotive Service Technology programs advisory board meets three times a year. We use the advisory board to give direction on curriculum that the industry feels we need to add / subtract from the program. These local business owners are able to give us real world information about the types of cars they are working on and the level of repairs and diagnostics our students will need to enter the workforce. They also give us feedback on what the industry's working technicians need in the way of continuing education courses. We then make changes to our curriculum or offer fleet CEU classes to meet these needs.

Degree and Certificate Outcomes:

Identify and explain any changes that have been made to degree and certificate learning outcomes since the last program review

The Automotive Service Technology program students prepare and present written and verbal presentations on current industry technology changes. These reports are assignments in several of our courses. Students also prepare and present written repair orders for internal, external customers and course work. These changes have been made to meet embedded related instruction requirements. Examples can be found in our embedded related instruction file.

What strategies are in place to assess degree and certificate outcomes?

The Automotive Service Technology SAC is constantly updating information within the program to reflect current issues and standards as they relate to automotive curriculum and the communities, cultures, and industry we serve. We receive current industry feedback and information from our advisory board. We use the advisory board to help determine the changes that need to be made.

Give evidence that students are meeting these outcomes.

Co-Op workbook evaluations.

Related Instruction documentation.

Students written / verbal periodical reports.

Describe any changes made towards improving attainment of the degree and/or certificate outcomes.

The Automotive Service Technology program has looked at the reasons why some of our students do not complete the degree or certificate. We have found that many of our students are only missing two required courses. Those are AM280 (Co-Op) and CG209 (Job Finding Skills). To help ensure that more of our students will complete these classes we have started requiring CG209 as a first term course. We are also more closely tracking when students sign up for Co-Op. This should help ensure that more students complete their requirements by the time they complete their automotive courses. The department chair and Perkins advisor track students' schedules and graduation applications.

Review job placement data for students over the last five years, including salary information where available.

The Automotive Service Technology students find employment through PCC's employment / Co-Op specialist. He posts job opening for current students and graduates on-line, via e-mail, and on our department bulletin boards. Salaries for entry level technician positions range from $11.50 - $25.00hr for graduates. Salary levels for students who get apprentice level positions while attending classes, or in Co-Op class, salaries range from $9.50 - $11.50 hr. These rates are noted in the job orders posted to students. In addition, program staff uses their informal contacts in industry to help students seeking work.

Forecast future employment opportunities for students.

The Automotive Service Technology program expects demand for technician positions to remain much larger than state wide average. Significant job openings in Oregon and the nation are projected to grow (see OLMIS and U.S. Department of Labor Statistics report). This outlook has kept the program full. We anticipate that this trend will continue into the foreseeable future.

The General Motors Automotive Service Education Program forecasts a reduction in employment opportunities for students in the near future. General Motors Corporation appears to be close to bankruptcy that may result in Dealership closures. Non renewal letters have been delivered to dealers that will result in the dealer closing by 2010 at the latest. With skilled technicians out of work it is the belief by the remaining dealers that they will not need entry level apprentice technicians with an abundance of qualified and skilled technicians looking for work.

Analyze any barriers to degree or certificate completion that your students face, and consider the reason that students may leave before completion.

The Automotive Service Technology student seldom has difficulty finding a job. Most of our students are working in industry before they complete their automotive classes. It is because of this that many of our students do not finish the degree or certificate. Once they are working they often times do not see the value in paying to complete a Co-Op class. Some of our students find a job that fulfills their needs after only attending 2 or 3 terms of classes. These students usually need the money of a full time job more than they need to complete their certificate. There are a few students each year that enter the program, and after as little as one class or one term, realize that the automotive career choice is not for them. These students usually go on to explore other education opportunities. Attendance requirement s in this program can cause a student to fail a course. This seems to be more common with younger students and students that have had no college experience. Sometimes attendance issues are unavoidable for the student due to illness and family emergencies. The faculty and staff work closely with students to help resolve as many attendance conflicts as possible. Most of the time students choose to continue the program after some modification to their course schedule. Students sometimes return after dropping out years before, to complete the program and get their certificate or degree.

The General Motors Automotive Service Education Program students are facing an industry in which their parent company may be facing bankruptcy. Morale among dealership employees is low and work is scarce. Many students are looking at other educational opportunities in sectors that are showing current job growth/demand. Some students are being laid off because of lack of work and are finding it very difficult to find another sponsoring dealership.

7. Recommendations for improvement

Assess the strengths in your program/discipline.

The Automotive Service Technology has earned a reputation in the industry, community, and school, as a program that produces top notch Automotive Technicians. Our faculty and staff work hard to ensure that students get the

best possible technical education. In the process of learning how to diagnose and repair the complex automobiles of today the students learn valuable life skills that will help them to be successful members of the community. We have been well supported by the school and have the facility and tools necessary for the students to get the experience they need working with up-to-date tools and equipment. Our advisory board members and shop owners / managers that hire our students tell us they are well prepared to begin their career.

The Automotive Service Technology department has taken a bold leap forward this year. Adding Hybrid curriculum to our program and looking forward to adding Plug-in curriculum will place us as the leader in technical education in these areas. We will be the school that students and working technicians will come to for these classes.

The future is bright for our program. Students that attend the program looking to establish a career are successful. Instructors and staff enjoy the work that they do in helping the students succeed. The automotive industry recognizes the quality of our instruction and of the students that graduate. We have positioned ourselves to be the premier school for Hybrid and Plug-in vehicle diagnosis and repair courses.

Identify the areas in need of improvement.

The Automotive Service Technology will need to work hard in the coming years to make our program even better. The department will need to address the issue of contact hours to credit hours. This will require a look at our entire course layout, scheduling, staffing, and content. The way the school handles the budget for parts or the amount of dollars available will need to be addressed. Our equipment is aging and new equipment is very expensive. We will need to look at more funding or other ways of funding to afford new equipment as needed. This will include funding for new technologies like Plug-in vehicle technology. This will require an investment in tools, equipment, and training for instructors and staff. Our computer access for students will need to grow. The challenge will be having enough computers and the band width to accommodate them. In the future, if our program continues to grow, our facility will need to grow to serve the students needs.

Given the above analysis and other findings of the SAC, prepare a set of recommendations relevant to areas such as curriculum and professional development, access and success for students, obtaining needed resources, and being responsive to community needs.

The Automotive Service Technology has some big challenges ahead of us. Some of these challenges are operational and will require us to think in new ways of delivering our curriculum. Many of them involve how we will keep up with new technology, keep current technology working, and maintain an excellent technical training program for students. We will have to be innovative in how we budget our funds, spend any additional funds available and find new funding sources. This program is a vital tool for students looking for a career, industry needing skilled workers, and working technicians struggling to keep up with current technology. Our challenge is to get the support we need from all of our customers (Industry, School, Students, Industry Technicians).

The Automotive Service Technology Summary of Recommendations:

- **Make the best use of the facility, tools, equipment, and resources that we have**
- **Address/Correct contact hours to credit hours**
- **Better funding for parts budget**
- **Budget for new Plug-in curriculum**
- **Budget for instructor / staff training in Plug-in technology**
- **Budget for replacement of aging tools and equipment**
- **Budget for new equipment to meet industry standards**
- **Budget for an increase in the number of student computers**
- **Install enough band width to accommodate computer use**
- **Offer more fleet / technician continuing education classes**
- **Monitor student progress to ensure more students complete CG209 and Co-op**
- **Update the programs core outcomes map**
- **Maintain relationships with student sponsor dealerships**
- **Find and nurture new corporate/business sponsors**
- **Get additional industry representation on our advisory board**
- **Apply for grants and other funding sources that will help us support our program**
- **Look for money available for supporting/developing "green technologies"**