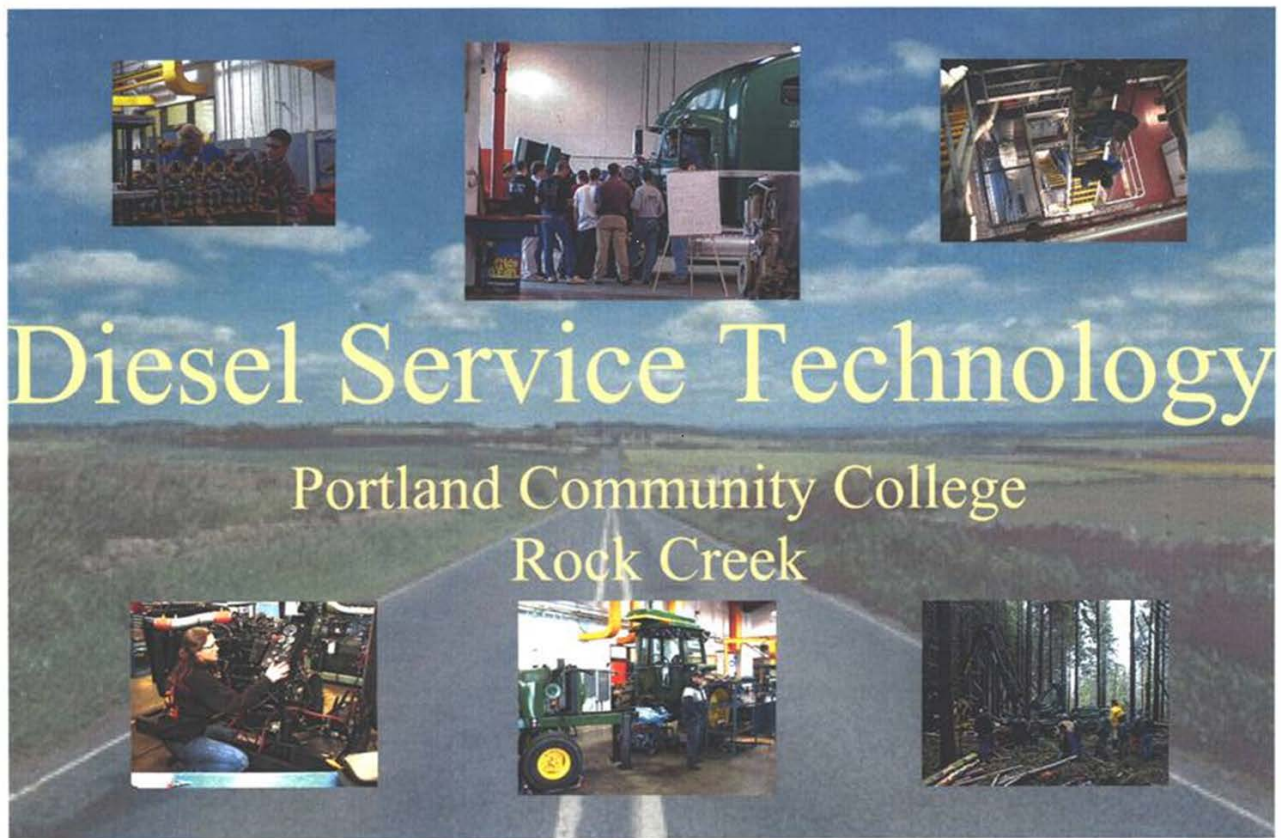


# Diesel Service Technology Program Review 2018

Portland Community College



## Diesel Service Technology

Portland Community College  
Rock Creek

# Table of Contents

	<b>Introduction .....</b>	<b>Page 3</b>
<b>1)</b>	<b>Diesel Service Technology Program Overview .....</b>	<b>Page 5</b>
<b>2)</b>	<b>Outcomes and Assessment .....</b>	<b>Page 8</b>
<b>3)</b>	<b>Other Instructional Issues .....</b>	<b>Page 15</b>
<b>4)</b>	<b>Needs of Students and the Community .....</b>	<b>Page 18</b>
<b>5)</b>	<b>Faculty .....</b>	<b>Page 20</b>
<b>6)</b>	<b>Facilities, Instructional, and Student Support .....</b>	<b>Page 21</b>
<b>7)</b>	<b>Keeping pace with changing employer needs .....</b>	<b>Page 23</b>
<b>8)</b>	<b>Recommendations .....</b>	<b>Page 29</b>
<b>9)</b>	<b>Assurances .....</b>	<b>Page 30</b>
<b>10)</b>	<b>Appendices .....</b>	<b>Page 31</b>
	<b>A. Advisory Committee Meeting Notes .....</b>	<b>Page 32</b>
	<b>B. ASE Student Certification Results for 2014 to 2018 .....</b>	<b>Page 41</b>
	<b>C. ASE Student Certification Interpretation Guide .....</b>	<b>Page 46</b>
	<b>D. Safety Assessment Results for 2014 to 2018 .....</b>	<b>Page 47</b>
	<b>E. Wage and Employment Information .....</b>	<b>Page 52</b>
	<b>F. Student Body Employment Information .....</b>	<b>Page 53</b>
	<b>G. Diesel Day and Junior/Senior Day Flyers .....</b>	<b>Page 54</b>

## Diesel Service Technology Program Introduction

The Diesel Service Technology program at PCC offers the community comprehensive, technical training in the repair and maintenance of on and off-road diesel powered equipment. Our primary focus is heavy duty trucks used in the transportation industry. Students receive instruction regarding the different systems that heavy-duty trucks are comprised of including diesel engines, drive trains, hydraulics, electrical and electronic systems, chassis and braking systems, and pneumatics. For students who work during the day we offer night courses, giving them the ability to fit our program into their schedule.

The objectives of the Diesel Service Technology program at PCC are to prepare our graduates to enter into industry employment with the skills and knowledge to perform entry-level work, or to further their education by transferring to a 4-year college that offers an advanced degree in Diesel Service Technology. To accomplish these objectives we maintain National Automotive Training Education Foundation (NATEF) certification. NATEF is a private, nonprofit organization dedicated to improving the quality of technician training programs nationwide. We are one of only 88 post-secondary colleges in the nation to be certified and the only NATEF master certified Diesel program in the state of Oregon. NATEF recertification takes place every 5 years, with a mid-term review every 2 ½ years. To remain certified, we must maintain our program according to their strict guidelines concerning the training of our students, the equipment we use, our safety standards, our facilities and the qualifications of our instructors.

Toward accomplishing our objective of preparing our graduates for higher education, we have articulation agreements with Montana State University Northern (MSUN) and with Centralia College in Centralia, WA; our graduates can apply their credits directly to the BS programs of both colleges and enter as a junior.

The Diesel Service Technology program maintains close relationships with regional employers; representatives from 36 different repair shops; dealerships and municipal agencies. These are members of our Advisory Committee who provide valuable input. We work with public organizations such as the Public Fleet Managers Association (PFMA) as well as private companies to provide training courses for their technicians. We are an affiliate of the Eaton Corporation and Bobcat Equipment Company, providing facilities and training aides free of charge in exchange for

instructor training and the most advanced components and equipment they have in their inventories. Bobcat provides skid-steer and mini excavator machines for our hydraulics and fuels courses, and Eaton has generously donated automated transmissions that are the most advanced in the industry. We enjoy close relationships with Freightliner and Cummins who share with us their online training resources. Freightliner, through their parent company, Daimler Trucks North America (DTNA), has enrolled PCC in its GetAhead program, which is specifically tailored to post-secondary programs in the diesel field. Training, testing and certifications earned in GetAhead follow the student their entire career if they are employed by a DTNA dealership. The same is true for Cummins with use of their Virtual College; the certifications follow the students into their employment with any Cummins dealership. These affiliate relationships benefit both parties: our affiliates have state-of-the art facilities to train their technicians and we have access to materials that help us keep our own skills current. We can also pass on our training to our students.

One of the “stand-out” virtues of our program is our ability and willingness to leverage the close relationships we have with our Advisory Committee. We organize and host a yearly “Diesel Day” event at the Rock Creek Campus. The main goal of the event is to introduce middle and high schoolers to Diesel Power. It also serves to bring recognition to the Rock Creek campus and PCC, and provides a platform for our Advisory Committee members to showcase themselves and the equipment and technology they offer. We also recruit and help support contestants in the SkillsUSA and the Oregon Trucking Association SuperTech competitions, both of which are nationwide competitions. This February we are also resurrecting the “Junior/Senior Day” event, which will be a series of discussions paneled by Advisory Committee members. The discussions provide an opportunity for high school juniors and seniors interested in the business to hear what local employers have to offer, and to ask questions about the industry.

## 1. Program/Discipline Overview:

### A. What are the educational goals or objectives of this program/discipline?

The objectives of the Diesel Service Technology program at PCC are to prepare our graduates to enter into industry employment with the skills and knowledge to perform entry-level work, or to further their education by transferring to a 4-year college that offers an advanced degree in Diesel Service Technology.

We believe that certain fundamental values direct the course of our program, influence our decisions and focus our purpose. As a program, we value and strive:

- To provide and maintain quality instruction and equipment that represent current industry standards.
- To advise and assist students towards completion of their academic and career goals.
- To bring awareness to the public regarding the scope and economic effects of the Diesel Industry.
- To provide a safe and hostile free learning environment.
- To respect the dignity and worth of each individual.
- To maximize the efficiency of public funds and allocate them as intended.

### How do these compare with national or professional program/discipline trends or guidelines?

Diesel service programs nationwide have as their guiding principle the intent to produce graduates who can perform entry-level tasks when they begin working in the industry. However, very few have it as a stated outcome to prepare graduates for further education. We believe the option is important for those graduates who want to advance their careers and we encourage and guide those interested to the institutions with which we have articulation agreements.

We understand by personal experience the value of an advanced degree in this industry. Graduates from 4-year programs can command starting salaries of up to \$60,000 or more. The market for BS Diesel graduates – although not as broad as that for certified or AAS Diesel graduates – is one that is terribly underserved by higher education.

**Have they changed since the last review, or are they expected to change in the next five years?**

No, neither our goals nor our objectives have changed since the last review. There are no plans to change our objectives in the near future, but we are aware that as the industry evolves we will need to evolve with it. Our goals are always open to reasonable changes.

- B. Briefly describe curricular, instructional, or other changes that were made as a result of your SAC’s recommendations in the last program review and/or the administrative response. (The administrative response can be found opposite your SAC’s listing at the web page where the Program Reviews are posted – look for the “AR” pdf.) Note: Any changes NOT made as a result of the last program review should be described in the appropriate section elsewhere in this template.**

### **2014 Administrative Response Suggestions and Observations**

*Advisory Committee – In the written program review, the following statement was made “Objective industry standards for safety, work ethics and attendance are difficult to come by. We have addressed this issue with our Advisory Committee members and are awaiting relevant feedback.” We appreciate that you reach out to the Advisory Committee for appropriate feedback. We look forward to hearing the suggestions from the Advisory Committee.*

We never received a response that could be regarded as a set of “hard” standards; most employers follow their own in-house policies which differ from location to location, and manager to manager. In general terms safety violations follow a “3-strikes-and-out” rule unless the severity of the violations causes injury or death, or places life and limb in

jeopardy. In such cases immediate dismissal is often the result. Disciplinary actions for minor safety violations range from reprimands to unpaid leave. Work ethic generally focuses on attendance, but again varies from shop to shop and more is flexible for field service technicians who are dispatched from home. Personality conflicts are also handled on a case-by-case basis, but in general agitators (those who cannot work with other people) are edged out of the organization in some way. In spite of the variety of responses to the question, our Advisory Committee members approve of our approach to grading and tracking safety and work ethic and find the information useful when made available to them during interviews and references.

***Distance Learning Classes – In the written program review, reference was made to the conversion of curriculum to D2L format. We support adapting the curriculum to the distance learning modality as appropriate. We look forward to learning more about the impact this has on the ability to provide up-to-date curriculum for the students.***

Our conversion to D2L format is still a work in progress. Due to the hands-on style of instruction, our use of D2L is naturally limited to things such as homework assignments, links to outside resources, quizzes, and as a storehouse for lecture notes and other materials that are hard to find elsewhere. One terrific advantage that we're able to leverage with D2L is meeting accommodations for students with learning disabilities. Often the recommended accommodations include access to written lecture notes and copies of slides or other such materials. These can be easily converted into PDF format and uploaded to a content folder which all students can access. Prior to D2L these accommodations were printed out...which often resulted in documents numbering in the 100's of pages.

***Co-Operative Education Option – In the written program review, a paragraph described an information packet that is being prepared at the request of the Advisory Committee regarding the potential of offering a co-operative education option for your students. We look forward to the outcome of this decision.***

The Advisory Committee backed out of this initiative due to unspecified union contract issues.

2. **Outcomes and Assessment:** Reflect on learning outcomes and assessment, teaching methodologies, and content in order to improve the quality of teaching, learning and student success.

**A. Course-Level Outcomes:** The college has an expectation that course outcomes, as listed in the CCOG, are both assessable and assessed, with the intent that SACs will collaborate to develop a shared vision for course-level learning outcomes.

**i. What is the SAC process for review of course outcomes in your CCOGs to ensure that they are assessable?**

The SAC reviews course outcomes once every year during the Fall and Spring SAC meetings. Some of our course outcomes are shared outcomes, such as safety and attendance, and are assessed each year as part of our program assessment obligations. Outcomes that are specific to particular course content are reviewed informally during the meetings by relating them to classroom activities that are graded, such as labs, quizzes, exams, etc. Our course outcomes are also fully reviewed every 5 years by NATEF.

**ii. Identify and give examples of changes made in instruction, to improve students' attainment of course outcomes or outcomes of requisite course sequences (such as are found in in MTH, WR, ESOL, BI, etc.), that were made based on the results of assessment of student learning.**

DS206 Medium/Heavy Duty Truck Brake: An 8-credit class that takes place as the second course after DS106 Preventive Maintenance Inspection and Detroit Diesel Electronic Controls, a 4-credit class. Depending on the length of the term, 11 weeks for Spring term and 12 weeks for Fall term, this class sometimes is reduced to a 7 week course. 2 days are needed at the end of the term for written and practical finals reducing it to 6 ½ weeks. 7 1/2 weeks on 12-week terms. There are 12 topics covered during DS206, five related to the topic of brakes which consumes about three weeks of course time. The remaining seven topics are not inter-related; they

do not build upon each other as part of a single system. The instructor selects several of the secondary topics to focus on more directly, and then relies on manufacturers online training materials as homework assignments for the remaining topics. In lab, assignments are covered for all topics in the course. An improvement in scores in the topic of brakes has been increasing in the last 4 years (except 2018 when scores in all diesel-testing areas slipped) along with other prioritized topics. Some success along with some failures has occurred because of the reliance on online training.

DS100 Heavy Duty Diesel Electrical: Prior to fall 2018, Heavy Duty Diesel Electrical consisted of two six credit, six week courses (DS104/204). Each class had a separate syllabus plus separate written and practical finals. DS104 was a pre-requisite for DS204.

The average failure rate for each 6-week 6 credit module of the last 12 classes (104/204) was 13% mainly because students struggled with understanding some of the difficult concepts and with mastering some of the specialized tooling. If their grade started to slip and got too low there simply was not enough time to get it up above the required passing grade of 70%.

Starting fall of 2018 DS104/204 was combined into a single twelve week 12 credit class, DS100, for the following reasons:

1. This resulted in an extra week of lab/lecture time since there was only one syllabus and one final.
2. Those students that struggle in the beginning now have more time to understand and apply the things that they are learning.
3. If a student's grade begins to slip below 70%, they have more time to correct their current course.
4. Planned and unplanned school closures have less of an impact on a 12-week class.
5. The instructor is better able to cover the more complex systems earlier.

6. There was an extensive overhaul of the curriculum with new labs and new lab fixtures that more accurately reflects the current technology.

Since the change was made to the new 12 week course the failure rate has dropped from 13.0% to 11.8% as of fall 2019. The results are encouraging, but further measurement of the failure rate will be needed to declare it a success.

**B. Addressing College Core Outcomes**

**i. Updated Core Outcomes Mapping Matrix:**

This change reflects the combination of DS104/204 into DS100.

Course #	Course Name	CO1	CO2	CO3	CO4	CO5	CO6
DS 100	Heavy Duty Diesel Electrical/Cummins Electronic Controls	1	1	3	2	4	0
DS 101	Diesel Engine Rebuild	1	1	3	1	4	0
DS 102	Truck Power Train	1	1	3	0	3	0
DS 103	Fuel Injection Systems	1	1	3	0	4	0
DS 105	Fundamentals of Hydraulics & Air Conditioning Systems	1	1	3	0	2	1
DS 106	PMI/Detroit Diesel Electronic Control	0	1	4	0	4	0
DS 202	Heavy-Duty Power Train	0	1	3	0	3	0
DS 203	Fuel Injection System Diagnostics & CAT Electronic Engine Controls	2	1	3	0	4	1
DS 205	Mobile and Hydrostatic Hydraulics	2	1	2	0	4	0
DS 206	Medium / Heavy-Duty Truck Brake, Suspension & Steering	0	1	3	0	4	0

PCC Core Outcomes

- CO1 Communication
- CO2 Community and Environmental Responsibility
- CO3 Critical Thinking and Problem Solving
- CO4 Cultural Awareness
- CO5 Professional Competence
- CO6 Self-Reflection

**C. Assessment of Core Outcomes (LDC) or Degree and Certificate (CTE) Outcomes.**

- i. Reflecting on the last five years of assessment, provide a brief summary of one or two of your best assessment projects, highlighting efforts made to improve students' attainment of the Core Outcomes (LDC-DE disciplines) or Degree and Certificate Outcomes (CTE programs). (If including any summary data in the report or an appendix, be sure to redact all student identifiers.)

An Assessment driven change was made beginning in 2013 because of our TSA's (ASE Student Certification Exams).

The TSA exams that test student competency in Brakes, Steering and Suspension show that our students have difficulty in these areas. Part of the problem is that these concepts are touched upon only once during the two-year program in DS206, whereas the concepts associated with electricity and electronics, engine systems and hydraulics are an integral part of almost all other courses. Students were encouraged to take the Brakes & Steering/Suspension exams immediately after completing DS206 and most did. (See appendix B and C for more information.)

**ii. Do you have evidence that the changes made were effective by having reassessed the same outcome? If so, please describe briefly.**

Our nationwide percentile ranking for Brakes improved from a ranking of 77 in 2013 to 89 in 2015 and 88 in 2017. The percentile ranking for Steering and Suspensions dipped slightly in 2014 to 75, but has steadily improved to a 91 ranking in 2017. We believe these improvements were the result of encouraging students to take the exams immediately after taking the courses.

**iii. Evaluate your SAC's assessment cycle processes. What have you learned to improve your assessment practices and strategies?**

ASE is now offering an additional testing window during the school year, so there will be one more opportunity each year for students to complete the exams immediately after they have completed the associated course or courses. This should help with the results.

We are considering making a change to the TSA requirement from a "must take" to a "must take and pass". The reason for this is due to a dip in 2018 results. It was reported to us that an unusually high number of students did not take the exams seriously and simply checked answer boxes at random. The exam results did show a higher than usual failure rate during that period. Although taking the exams is a requirement for graduation, passing them is not; the lack of accountability for the results has led some students to not take the exams seriously, but for some reason

this year there were more than usual. The change proposed will make passing the exams a requirement.

We have also made improvements to our Safety & Work Ethic assessment by expanding the data points gathered to include details on student who fail, whether it was due to unexcused absenteeism, safety/work ethic violations or other reasons. This should help point us toward and help us address problems that contribute to student failure. Our first round of data gathering was during the 2017-2018 academic year. Please see Appendix D page 51 for the Safety & Work Ethic report for 2017-2018.

Our graduate survey has also improved due to lessons learned from early attempts. We now solicit graduates by email and conduct a more detailed survey using Qualtrics. The quality of the survey has improved along with the response rate, but the results remain disappointing and we are looking to make further improvements.

- iv. Are there any Core Outcomes that are particularly challenging for your (LDC-DE) SAC to assess, or difficult to align and assess within your (CTE) program? If yes, please identify which ones and the challenges that exist.**

There are two Core Outcomes that present a challenge for us to align to; Cultural Awareness and Self-Reflection.

Cultural Awareness is difficult because it is a topic that is broader than what we can effectively address in our classes. The nature of this profession demands professional competency above all other qualities and is what we naturally focus on. We do focus on safety, timeliness and absenteeism in all of our classes. It can be said that these are all part of every company culture that employs diesel technicians.

Self-Reflection is difficult for much the same reason as Cultural Awareness; however, we do have two Diesel classes that have writing assignments. In DS105

we require a technical report that asks students to reflect on an area of interest related to hydraulics, while in DS103 we have a writing assignment that ask students to reflect on what type of employer they might want to work for. CG209 is also a required course, which covers interview skills, resume writing and other topics requiring self-reflection.

- v. **CTE only: Briefly describe the evidence you have, determined by direct assessment, that students are meeting your Degree and/or Certificate outcomes. See appendix \_ for assessment summaries.**

Professional Competency Outcomes: Since 2013 our nationwide ranking in the ASE Student Certification program has either improved or stayed the same in all categories. We consistently rank within the top 25% of all Diesel schools in the nation, and often rank within the top 15% nationwide.

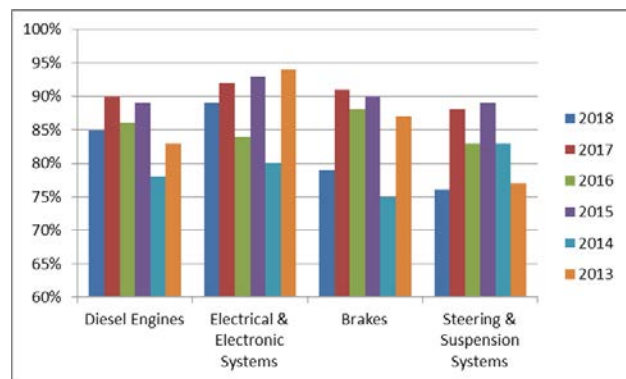


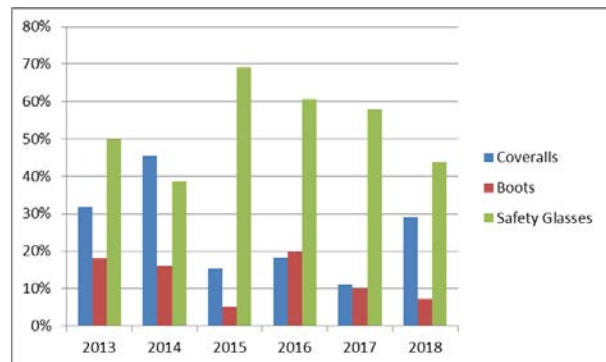
Figure 1: ASE Testing Results 2013 to 2018, by Category

PCC Percentile Ranking, Nationwide	2018	2017	2016	2015	2014	2013
Diesel Engines	85%	90%	86%	89%	78%	83%
Electrical & Electronic Systems	89%	92%	84%	93%	80%	94%
Brakes	79%	91%	88%	90%	75%	87%
Steering & Suspension Systems	76%	88%	83%	89%	83%	77%

Table 1: ASE Testing Results 2013 to 2018

Safety & Work Ethic

Outcomes: The top safety violations among our student body have always been related to coveralls, leather topped boots, and safety glasses. We



continue to emphasis safety, including use of proper Personal Protective Equipment. The data collected over the past 5 years does show a decline in violations regarding coveralls and boots, but safety glasses remain a tough one to enforce.

Graduate Survey:

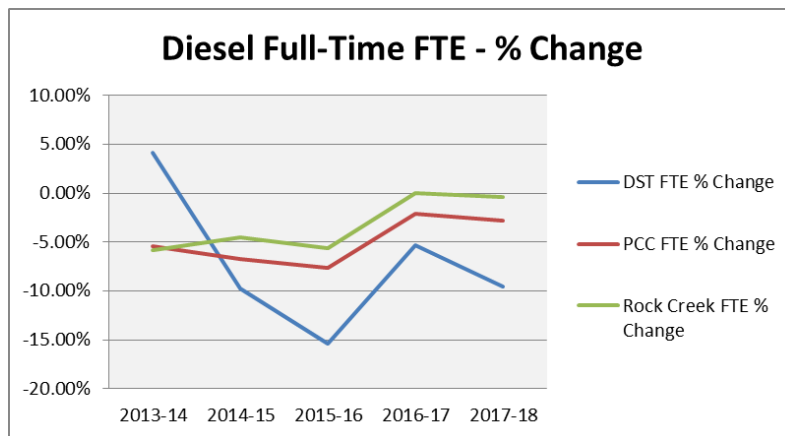
Our graduate survey has yet to yield actionable results. The difficulty has been in maintaining a continuing relationship with a large enough portion of our graduates to make the survey statistically valid. We started with a 10 question mailer which was sent to the most current addresses of two graduates (both of whom continued on to Montana State University Northern) which received only one response. We have expanded the audience to include any pursuit of continuing training such as ASE certifications and industry training. We have since created a Qualtrics email survey and expanded the sample population to an average of about 140 recipients. Since then our response rates have been around 8% to 10%. The majority of those who responded considered the preparation for higher education adequate, and considered their experience in the program as positive.

The lack of results is a topic we have discussed within the SAC and with colleagues in other departments and we are considering further changes. The idea of surveying graduates is generally understood to be unreliable due to poor response rates; however the idea of surveying our graduates about their level of preparedness for further education is one we're not ready to abandon quite yet.

### 3. Other Instructional Issues

- A. Please review the data for course enrollments in your subject area. Are enrollments similar to college FTE trends in general, or are they increasing or decreasing at a faster rate? What (if any) factors within control of your SAC may be influencing enrollments in your courses? What (if any) factors within control of the college may be influencing enrollments in your courses?

Our enrollment over the past 5 years has declined at roughly the same pace as the rest of the college. Between 2013 and 2015 it declined at a faster pace. It has recovered

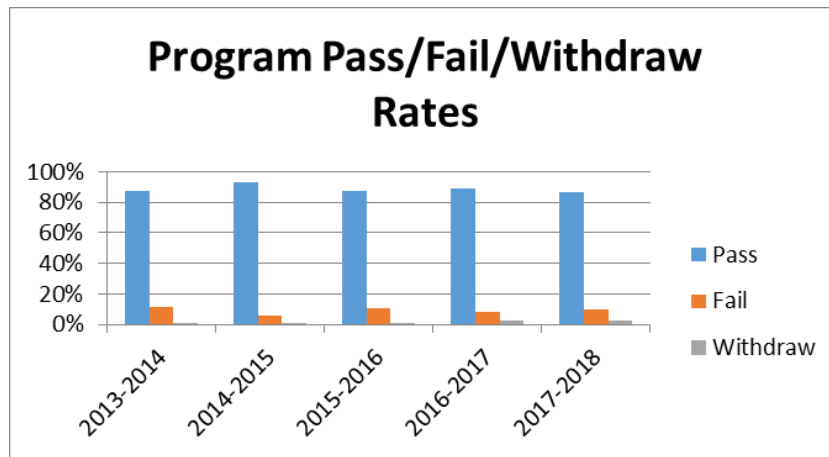


somewhat since then, but is still declining. We know that the economy has a lot to do with the decline; however the increasingly severe shortage of qualified technicians and the

rise in starting wages being offered are most likely responsible for the faster pace of enrollment decline. We are seeing more efforts by larger corporations to recruit directly from high schools and middle schools, and are seeing more apprenticeship/education initiatives that are bypassing traditional public education. We're not aware of any specific factors within the control of the SAC or of the college that may be responsible for these declines outside of lackluster recruitment efforts.

**B. Please review the grades awarded for the courses in your program. What patterns or trends do you see? Are there any courses with consistently lower pass rates than others? Why do you think this is the case, and how is your SAC addressing this?**

Our Pass/Fail rates have remained consistent. There are no particular patterns other than a high pass/low fail rate for the entire program. The statistics do not indicate that there are specific courses that produce consistently lower failure rates, but do show some years that are worse than others. One possible explanation for the yearly fluctuations might be recent changes to the college entrance/placement exams.



**Diesel Program Failure Rates by Course**

	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
<b>DS101</b>	4.1%	6.3%	12.2%	2.3%	15.0%
<b>DS102</b>	4.8%	2.0%	9.8%	0.0%	12.1%
<b>DS103</b>	18.9%	6.4%	3.3%	11.4%	14.3%
<b>DS104</b>	2.0%	4.7%	9.3%	21.9%	14.3%
<b>DS105</b>	26.7%	7.1%	20.0%	3.6%	7.1%
<b>DS106</b>	4.1%	2.1%	0.0%	0.0%	0.0%
<b>DS202</b>	5.0%	8.3%	12.8%	7.3%	2.9%
<b>DS203</b>	24.5%	8.2%	6.7%	17.1%	18.5%
<b>DS204</b>	4.3%	7.7%	7.1%	12.5%	15.6%
<b>DS205</b>	18.6%	2.5%	27.9%	7.1%	13.8%
<b>DS206</b>	9.8%	6.3%	2.9%	12.8%	0.0%

- C. Which of your courses are offered online and what is the proportion of on-campus and online? For courses offered both via DL and on campus, are there differences in student success? If yes, describe the differences and how your SAC is addressing them.**

We offer no online courses.

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

No changes to curriculum have been motivated by educational initiatives.

- E. Are there any courses in the program that are offered as Dual Credit at area high schools? If so, describe how the SAC develops and maintains relationships with the HS faculty in support of quality instruction.**

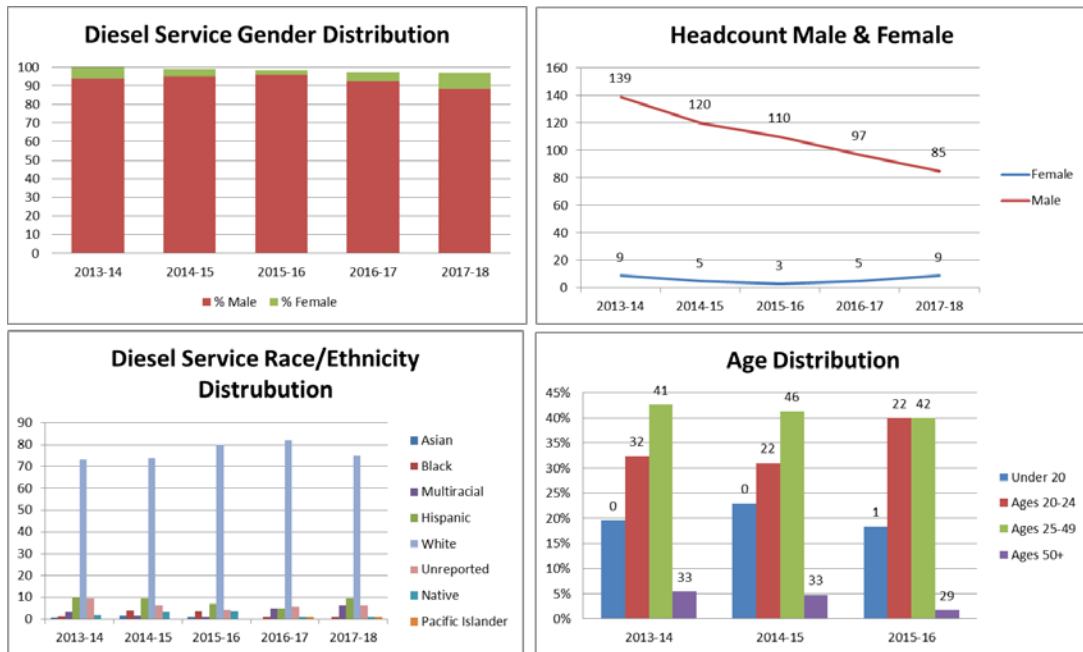
Career Encounters is a program piloted by the MAIT Division CTE instructors and College Success and Career Guidance for Beaverton School District. While the folks at College Success and Career Guidance manage the program, cohorts are exposed to Diesel Service Technology, Welding Technology, Auto Collision Technology, Aviation Maintenance Technology and Aviation Science Technology with 4 two-hour sessions at each discipline. Students receive college level credits for this program.

- F. Please describe the use of Course Evaluations by your SAC. Have you created SAC-specific questions? Do you have a mechanism for sharing results of the SAC-specific questions among the members of your SAC? Has the information you have received been of use at the course/program/discipline level?**

We have not created any SAC specific questions for our students to answer during Course Evaluations.

## 4. Needs of Students and the Community

- A. Have there been any changes in the demographics of the student populations you serve? If there have been changes, how have they impacted curriculum, instruction, or professional development, and, if so, in what way?



For the most part, the demographics of our student population remain largely white males. The number of women entering the program declined between 2014 and 2015, but is edging back up to 2013 levels. The fluctuations in our demographics have had no impact on our curriculum or instruction methods.

- B. What strategies are used within the program/discipline to facilitate success for students with disabilities? If known, to what extent are your students utilizing the resources offered by Disability Services? What does the SAC see as particularly challenging in serving these students?

Each instructor is responsible for adhering to the accommodation documentation presented by students with disabilities. Documentation is provided by the student outlining his/her special needs. Often course progress notifications are requested by our

Learning Skills Specialist to monitor student progress and students provide the specialist with feedback regarding instructors' adherence to their documented needs. When available we use spare classroom space and provide extra time when requested. Students with documented disabilities are supported on a case by case basis.

Our instructors have recommended Disability Services for certain students who have communicated their struggles, with good results. At any given time there may be as little as 1 or as many as 3 students in our student body that require accommodations.

**C. What strategies are used within the program/discipline to facilitate success for online students? What does the SAC see as particularly challenging in serving online students?**

We do not offer online courses.

**D. Has feedback from students, community groups, transfer institutions, business, industry or government been used to make curriculum or instructional changes (if this has not been addressed elsewhere in this document)? If so, describe.**

Yes. Most notable has been our policies regarding student attendance and work ethic. Our Advisory Committee members have made it clear to us that above all skills, adherence to policies and work ethic determine the long-term success in their organizations. Our response has been to closely track and grade students according to attendance, adherence to safety policies, use of class time, participation in general shop activities such as clean-up, and their demonstrated respect for other students and staff. The objective is to emphasize to our students that in addition to professional competence, personal work ethic and safety are prized values among the employers who hire from our program.

We added a shop management software program, RTA Fleet Management, based on requests from our Advisory Committee. Industry technicians are required to input their repair times, repair descriptions and select the proper work order job codes for the repairs that they do. Our subscription to RTA enables our students to do exactly the same work order input as when they will be working in a professional shop. Each student uses

the program for each lab sheet, job codes, time input, job description and finalizing the work order.

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

- A. Provide information on how the faculty instructional practices reflect the strategic intentions for diversity, equity and inclusion in PCC's Strategic Plan, Theme 5. What has the SAC done to further your faculty's inter-cultural competence and creation of a shared understanding about diversity, equity, and inclusion?**

Our program remains open to all students who meet the prerequisites. It is and always has been our policy to provide equal access and treatment of all students.

- B. Report any changes the SAC has made to instructor qualifications since the last review and the reason for the changes. Current Instructor Qualifications are available at: <http://www.pcc.edu/resources/academic/instructor-qualifications/index.html>**

No changes have been made since the last review.

- C. How have professional development activities of the faculty contributed to the strength of the program/discipline? If such activities have resulted in instructional or curricular changes, please describe.**

Two instructors have utilized special instruction from TIP (Teacher Improvement Program).

We network with other instructors in Diesel related college programs throughout the Pacific Northwest by attending, and at times hosting, the Northwest Diesel Instructors Conference (NDIC). The NDIC originated at PCC, was hosted here at Rock Creek for many years, but now moves from college to college every two years to keep other programs engaged. It serves as a conduit for programs of all sizes to exchange ideas, update their technical skills, and forge relationships.

We attended factory training events hosted by Daimler/Freightliner, Cummins, Detroit Diesel, Bobcat, Caterpillar and Eaton. These training events keep us informed of advances in the various systems. We also host local factory training events for Eaton and Bobcat as part of our affiliate agreements. The factory trainers use our classroom and lab facilities to present training events to local technicians and we are always invited to attend free of charge.

Within the last four years the Cummins electronic engine control curriculum was minimal and outdated. Through the purchasing and fabrication of lab fixtures and multiple training events, the subject has been made more relevant.

Two instructors have attended CEU 936E Assessing Core Outcomes at PCC, which is a class offered by the Learning Assessment Council (LAC). Based on the training, changes are being made to class assignments to make them more transparent. Also used input from the class to assist in department level assessments.

## **6. Facilities, Instructional, and Student Support**

### **A. Describe how classroom space, classroom technology, laboratory space, and equipment impact student success.**

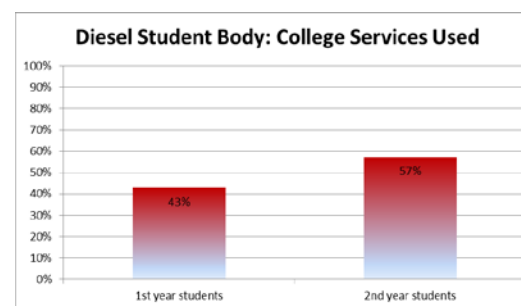
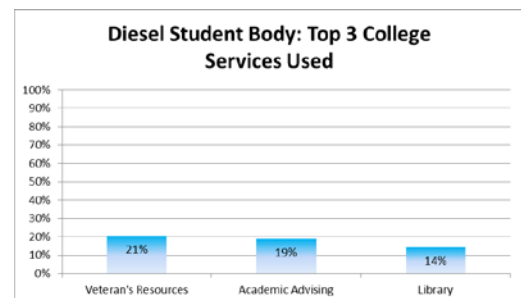
To keep up with changes, newer technology must be introduced to our students alongside legacy technology. Since diesel powered equipment is larger, space constraints force us to shuffle equipment and lab fixtures, sometimes multiple times, during class. This reduces the time we have to address student questions and often is the source of student complaints about our availability.

**B. Describe how students are using the library or other outside-the-classroom information resources (e.g., computer labs, tutoring, Student Learning Center). If courses are offered online, do students have online access to the same resources?**

Our students are encouraged to use the library to research resource materials for term papers and other course specific assignments. The library retains copies of all course textbooks for students lacking the means to buy them. Students are also encouraged to use online resources provided by dealers and manufacturers such as Caterpillar, Freightliner, Eaton and Meritor. Service manuals and specifications can often be found for free.

**C. Does the SAC have any insights on how students are using Academic Advising, Counseling, Student Leadership, and Student Resource Centers (e.g., the Veterans, Women’s, Multicultural, and Queer Centers)? What opportunities do you see to promote student success by collaborating with these services?**

Students are encouraged to use the Writing Resource center, Veterans Resource center, and any other resources available to them on campus. We do not receive feedback from our students about any other resources than those mentioned above. The most recent survey of our students indicates that the Veteran’s Resource Center is the most used, followed closely by Academic Advising and the Library. It might also be worth mentioning that the majority of those who used the various college services were 2<sup>nd</sup> year students.



**7. Career and Technical Education (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...**

**A. Evaluate the impact of your program’s Advisory Committee on curriculum and instructional content methods, and/or outcomes. Please include the minutes from the last three Advisory Committee meetings in the appendix.**

The Diesel Service Technology Advisory Committee is very active. They provide technical assistance, donations and advice regarding the future trends in the local market. They also help us with recruitment activities such as Diesel Day and our recently reconstituted Junior-Senior Day. See Appendix 1 for Advisory Committee meeting minutes.

The Advisory Committee recently conducted our mid-term NATEF certification review, which helps us prepare for the full 5 year certification process.

They also have driven many changes in our program. Of these include:

- Academic prerequisites
- Attendance requirements
- Safety clothing requirements
- Curriculum changes in the technical areas
- Fall term 2013, 5 different companies sat on an industry panel to stress key industry topics to our entire student body.

**B. Describe current and projected demand and enrollment patterns for your program. Include discussion of any impact this will have.**

Our current enrollment is reflective of the general enrollment decline that the entire college has experienced since the recovery began in 2016. Until our space problem is

solved we anticipate that our future enrollment will follow the same patterns it has in the past.

Demand is a different story. There has always been a greater demand than supply for Diesel technicians. This imbalance will only get worse as the Baby Boom generation continues to retire. If we are able to expand our footprint, we will be better positioned to accept some of the industry initiatives that we've been forced to decline in the past. Because the demand for technicians has been constant and is growing, and because the industry is now starting to react to the growing shortage, we could very easily smooth out the fluctuations in our enrollment patterns by accepting technicians who are formally apprenticed or sponsored through industry partnerships. These partnerships might be of the same nature as the Caterpillar ThinkBig program, where employers fill seats with their own employees.

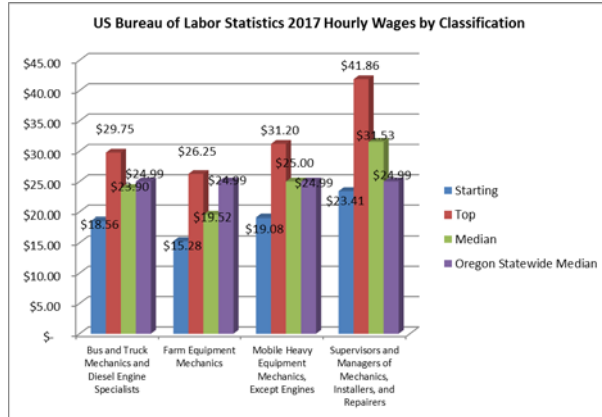
**C. How are students selected and/or prepared (e.g., prerequisites) for program entry?**

There is no selection process for entry into our program. Students must take the college placement test and score at or above the following requirements:

1. RD 80 or higher or equivalent placement test score.
2. MTH 20 or higher or equivalent placement test score

**D. Review job placement data for students over the last five years, including salary information where available. Forecast future employment opportunities for students, including national or state forecasts if appropriate.**

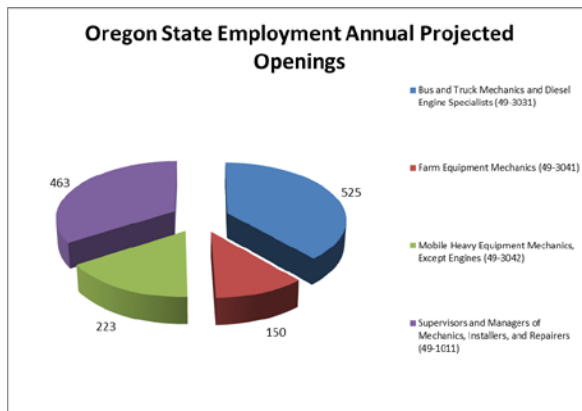
The college does not provide job placement data. We have no good means to track or



engage successfully with graduates to provide salary or employment information. National and State of Oregon statistics regarding starting wages and employment demand have not changed since the last program review, except to reflect an increase in wages and a continuing imbalance between the supply of technicians

and the demand for them.

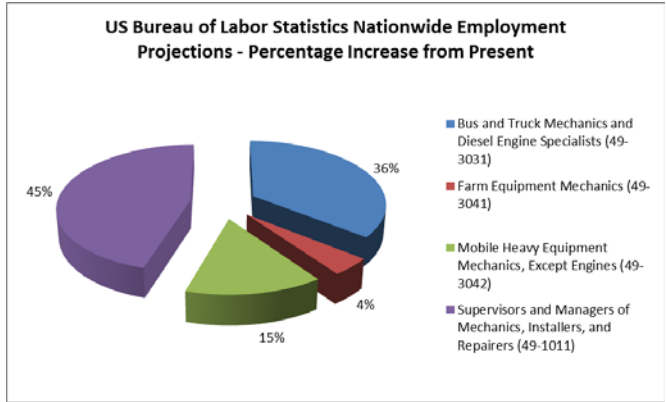
Compared to 2013 US BLS wage statistics, current starting wages nationwide have increased between 3% and 18% while the median wages have risen between 7% and 16%. The highest wage increases are for Bus & Truck Technicians and Diesel Engine Specialists. Median wages for Oregon increased across the board by about 6%. Mobile Heavy



Equipment Technicians are still ahead of Bus and Truck Technicians as well as Farm Equipment Technicians. Supervisors and Managers typically enjoy much higher salaries than the technicians they manage.

According to Oregon labor statistics, the demand for new technicians (growth) of all types within the state of Oregon is estimated to increase between 10% and 13% annually for the next 10 years. The demand for new technicians of all types to replace retiring technicians will exceed (and is already exceeding) the growth requirements by about 7 to 1. This

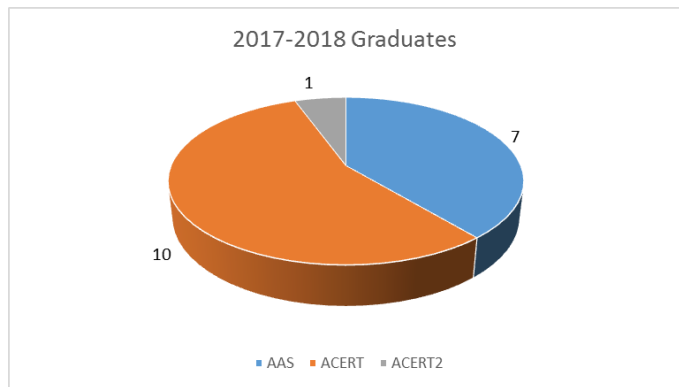
means that for every 8 positions that need to be filled, 7 are to replace retiring technicians and 1 is to fill new demand due to business growth.



US BLS growth and replacement statistics paint a similar picture of the labor shortage the Diesel powered industry is currently experiencing. This shortage is due to the increasing numbers of Baby Boomer technicians who are beginning their retirement.

- E. **Present data on the number of students completing degree(s) and/or certificate(s) in your program. Analyze any barriers to degree or certificate completion that your students face, and identify common reasons why students may leave before completion. If the program is available 100% online, please include relevant completion data and analysis.**

The data provided by IE does not provide a clear picture of the completion rates due to duplicates in the ACERT and ACERT2 categories between 2013 and 2016. The completion rates for 2017-2018 appear closer to what the real number is, given our student body size. Roughly 39% complete their studies with an AAS degree, 56% with an ACERT and 6% with an ACERT2.



Time and money remain the top reasons students give for not completing their academic goals. The primary purpose students enter the Diesel Service Technology program is to obtain employment in the

industry. Once that goal is achieved, it becomes more difficult to stay in school due to work schedules, expense, and other such pressures. Employers are growing more desperate for qualified technicians and add to the pressure to stop attending classes.

**F. Is the program Perkins-eligible? If so, answer the questions below. If not, put N/A for F.**

- i. With which secondary school(s) does the program have aligned Programs of Study? Do PCC faculty meet with these HS program faculty on a regular basis?**

We are currently not aligned with any HS programs in the area.

- ii. Please describe the Technical Skill Assessments (TSAs) that are reported annually. Include information about the nature of the assessment, content covered, alignment of degree and certificate outcomes, when the assessment is taken by students, the number of completers, and the percentage of students meeting the identified benchmark(s) for the last 5 years.**

The ASE Student Certification program is an off-the-shelf Technical Skills Assessment provided by Automotive Service Excellence, which is affiliated with NATEF (National Automotive Technicians Education Foundation). It is a multiple choice/true false computer based exam administered under controlled conditions by a proctor.

Students are given questions that are similar in style and content to the actual ASE Certification exams with the exception of experience based questions. A passing score is 20 out of 40 questions.

The content covered includes all aspects of Diesel Engines, Electrical and Electronic control systems, on-road truck braking, steering and suspension systems.

Assessments are offered during three testing “windows” during the academic year during the last two days of finals week. A student becomes eligible when he or she has completed the course or courses that relate to the exam content.

	2018	2017	2016	2015	2014	2013
<b>Number of tests taken</b>	109	125	164	100	122	42
<b>Percentage Pass (50% = Pass)</b>	91%	97%	96%	91%	88%	83%
<b>Percentage Fail (50% = Pass)</b>	9%	3%	4%	9%	12%	17%
<b>Number of students in sample</b>	46	45	45	25	32	12

Our average percentage pass rate 91%. This is over the past 6 years, involving 662 separate tests taken by 205 students.

**iii. What does the SAC consider to be the most impactful use of Perkins funding for your program?**

The funding that we receive from the Perkins Grant is for the employment of our Learning Skills Specialist Larisa Fedorkova-Felty. Larisa helps with student advising and with guiding students who need assistance regarding other academic services.

**G. Describe opportunities that exist or are in development for graduates of this program to continue their education in this career area or profession.**

Outside of the normal opportunities to obtain a B.S. from Oregon colleges, we currently have articulation agreements with Montana State University Northern (MSUN) and Centralia College of Centralia, WA. They accept all of the program credits toward their B.S. degree in Diesel Technology program. AAS graduates from PCC spend two more years in their programs before moving on into the industry, experiencing significantly higher starting wages and faster organizational advancement.

Oregon Institute of Technology offers our AAS graduates the opportunity to complete a BS degree in Industrial Management; however students have reported problems transferring credits. We do not have any agreements with OIT.

## 8. Recommendations

- A. What is the SAC planning to do to improve teaching and learning, student success, and degree or certificate completion, for on-campus and online students as appropriate?**

We are currently working to expand our lab space back to the original footprint prior to the creation of the Caterpillar ThinkBig program. We are also working to create a Tech-Center from which we can expand in the future and offer more to prospective students. We have also revived our efforts to reorganize the program, and are working to integrate the existing general EPG (Electrical Power Generation) program into our department.

- B. What support do you need from administration in order to carry out your planned improvements? (For recommendations asking for financial resources, please present them in priority order. Understand that resources are limited and asking is not an assurance of immediate forthcoming support. Making the administration aware of your needs may help them look for outside resources or alternative strategies for support.)**

Additional instructional and lab space is our biggest obstacle. The instructors are constantly rearranging the lab space so that we can gain access to needed lab fixtures, then rearrange back again into student learning space. Competing for floor space with different diesel classes is a constant occurrence each term. At the beginning of each term the instructors have to develop floor space plans to accommodate each class. The lack of space has caused our department to lose opportunities to partner with industry that could lead to additional students, supplied equipment and expanded employment opportunities for our students.

## 9. Assurances

Please put X's next to all three boxes to verify that...

- faculty and FDCs at all of the campuses offering courses in this discipline/program have received a late-stage draft of the Program Review document.
- all of the division deans offering courses in this discipline/program have been sent the late-stage draft.
- the SAC administrative liaison has reviewed and had the opportunity to provide feedback on the final report.

## 10. List of Appendices

<i>A. Advisory Committee Meeting Notes .....</i>	<i>Page 32</i>
<i>B. ASE Student Certification Results for 2014 to 2018 .....</i>	<i>Page 41</i>
<i>C. ASE Student Certification Interpretation Guide .....</i>	<i>Page 46</i>
<i>D. Safety Assessment Results for 2014 to 2018 .....</i>	<i>Page 47</i>
<i>E. Wage and Employment Information .....</i>	<i>Page 52</i>
<i>F. Student Body Employment Information .....</i>	<i>Page 53</i>
<i>G. Diesel Day and Junior/Senior Day Flyers .....</i>	<i>Page 54</i>

Appendix A: Advisory Committee Meeting Notes

Diesel Advisory minutes  
2-16-18

**Attendance**

	James Albright		Jim Smith		Rob Berovic		Colby Botts
	Rick Buckingham		Mike Conley		Mike Conway	X	Jennifer Nedron
	Brian Dilitto	X	Russ Dunnington	X	Eric Stanton	X	Anthony Brown
X	Abe Estimada	X	Brendan Boyce		Bram Fryer	X	Irene Gaustmi
X	John Hamel		Steve Lepschat		Michael Mame		Randy Mame
	Allen Nick		Brody Meyers	X	Trace Phillis	X	Tyler Phillis
	Bob Phipps		Randy Scott	X	Max Smith	X	Pat Thomas
	Stefanie Thomas		Kristin Thomas	X	Tim Snow	X	Jon Williams
	Tamara Williams		Mike Valery		Steve Yager		Sam Munnema
X	Lowell McMurray	X	Larry Phillips	X	Leroy Feldman	X	Larisa Felty
X	Hans Utke	X	Ray Schmidt		Randy Shelton	X	Isaiah Horton
X	Cassie Shearholdt						
X	Tyler Boniface						
X	Alex Kramer						

**Called meeting to order**

Called to order at 12:05 pm by Max Smith

**Approval of the minutes**

Approved unanimously as written

**Enrollment report**

Enrollment of full time students has moved from 76 students to 60 student. With the economy getting better this decrease in full time students is expected.

**Recruitment**

Instructors have begun to contact local high schools auto shop programs in order to boost enrollment into the Diesel program by setting up recruitment presentations. We are looking for volunteers from industry partners to come and talk to the students about the demand for diesel technicians and the career opportunities available to them. If you're interested in volunteering or have any suggestions please contact Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

New program brochures and an updated website are coming soon. Testimonials taken at the advisory meeting will be used in the revised program brochures and website.

**Career exploration day**

Due to the schedule for the Oregon City Service Learning Academy they are unable to participate in the Diesel Day held in May. All together 42 students participated in this event. The students broke into groups and visited 10 stations across the shops. The student really enjoyed the experience and this will likely become an annual event.

### **NW Career Expo March 13**

The Diesel Program will be participating in this year's NW Career Expo. On March 13<sup>th</sup> 2018 thousands of students from Oregon and Southwest Washington will attend the NW Career Expo where they will meet with over 170 Oregon employers, including Portland Community College's Diesel Program. We would like to provide students with giveaway items during the presentation. If you have giveaway items you would like donate please contact Jon Williams at [jonathan.williams1@pcc.edu](mailto:jonathan.williams1@pcc.edu)

### **Instructional support**

The Instructional Support Technician IV - Diesel Technology position is still open. This position is not only assisting in the tool room with orders and repairs but also supporting students in the lab. Spread the word as this position will close once sufficient qualified applications have been received.

### **Skills USA**

State Leadership and Conference will be held April 20<sup>th</sup>-21<sup>st</sup> 2018. Diesel Technology will be competing on April 21<sup>st</sup>. Nine Diesel Technology students from our program will be participating and competing.

Suggestions from the advisory include getting together a few weeks ahead of time to plan who and how everyone helping out. Volunteers are always needed. Please contact Randy Shelton at [rshelton@petersoncat.com](mailto:rshelton@petersoncat.com).

### **OTA / TMC Maintenance Fair and Super Tech**

TMC – 2018 Maintenance & Education Fair is on March 9<sup>th</sup> 2018.

The Maintenance & Education Fair is a full day of training, networking, and a vendor fair.

TMC 2015 Super Tech is on March 10<sup>th</sup>, 2018

Five students will be competing in the OTA's Technical Skills Competition-Super Tech 2018 and five students will be going as volunteers.

Advisory commented that when students (or technicians) compete, you get the opportunity to see where you have skill gaps.

### **Program review**

Program reviews are conducted periodically to secure and improve the quality instruction that PCC is known for. These reviews are conducted by the faculty of each Subject Area Committee as the experts in the field. The process of self-evaluation and discovery promotes the success and identifies future goals as determined by the faculty, students, and community needs for the program.

The Diesel Program will be undergoing a program review next year January 2019. Diesel will be presenting to a group of academics who will know nothing about the diesel industry. Although we are not looking for volunteers yet, in the future we will be looking for industry volunteers to communicate the needs and lack of technicians in the industry.

**Diesel Day**

Diesel Day will be on Friday, May 4<sup>th</sup> 2018 from 9am to 2pm. Last year we had around 600 participants. High schools are already contacting us to register for this event. If you're interested in participating at this year's Diesel Day then contact Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

**Recognition of donations**

S130 Bobcat Skid Steer Loader from Bobcat NW

Donations are always appreciated and on our wish list is complete vehicles along with components which are always needed.

**Other business**

Rob Berovic has been working with the leadership Hillsboro and they have been planning to add a diesel program.

The diesel program is happy to host interviews with students. If interested in interviewing students contacts Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

Cassie Shearholdt is the new jobs & internships specialist for the Diesel program. If you interested in posting job positions with jobs & internships please contact Cassie Shearholdt at 971-722-7452 or email [cassandra.shearholdt@pcc.edu](mailto:cassandra.shearholdt@pcc.edu).

**Date of next meeting**

April 13<sup>th</sup> 2018

**Adjourn**

Adjourned at 1:10 pm

Diesel Advisory minutes  
4-13-18

**Attendance**

	James Albright		Jim Smith	X	Rob Berovic		Colby Botts
	Rick Buckingham		Mike Conley		Mike Conway	X	Jennifer Nedron
	Brian Dilitto	X	Russ Dunnington		Eric Stanton		Anthony Brown
X	Abe Estimada	X	Brendan Boyce		Brain Fryer		Irene Giustini
	John Hamel		Steve Lepschat		Michael Maine		Randy Maine
	Allen Nick		Brody Meyers	X	Trace Phillis	X	Tyler Phillis
	Bob Phipps		Randy Scott	X	Max Smith	X	Pat Thomas
	Stefanie Thomas		Kristin Thomas		Tim Snow	X	Jon Williams
	Tamara Williams	X	Mike Vallery	X	Steve Yager	X	Sam Minnema
	Lowell McMurray		Larry Phillips	X	Leroy Feldman	X	Larisa Felty
X	Hans Utke		Ray Schmidt	X	Randy Shelton		Isaiah Horton
X	Cassie Shearholdt	X	Tom Keysee	X	Dan Zenger		
	Tyler Boniface						
X	Alex Kramer						

**Called meeting to order**

Called to order at 12:03 pm by Max Smith

**Approval of the minutes**

Approved unanimously as written

**Enrollment Report**

Enrollment has moved from 60 full time students in winter term to 57 full time students in the spring. The programs maximum capacity is between 80-100 full time students.

**Tech Center concept**

The Diesel program is looking to move into the ThinkBIG space once the new facility for ThinkBIG has been built. We will be looking to put together a focus group from the industry in order to determine what should be included in this new space.

Some changes being considered are truck driving (CDL training) class space along with a larger space for diesel classes, classroom availability for industry training, and the ability for a large conference room space. As we move forward, we will be looking for more input on the industry needs. To provide input please email Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

**Career Expo**

Jon Williams represented the Diesel program at this year's NW Career Expo. Around 4,000 high school students attended the expo this year. In the future, we would like to spruce up the display in order to draw in more student interest. We are looking into getting the Volvo truck updated

with the Diesel program decal. If you have any items you could donate for the display, please contact Jon Williams at [jonathan.williams1@pcc.edu](mailto:jonathan.williams1@pcc.edu).

#### **On Campus Interviews**

If you are looking for technicians and want to set up interviews with students please email Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu). The Diesel program does not run during the summer so if you think you may need to hire a technician during summer contact Russ before June 14<sup>th</sup> (last day of the term). Students are available for interviews Monday thru Thursday.

#### **Testimonials**

We have recently received the testimonials taken at the last advisory meeting. Soon they testimonials will be put out onto the Diesel programs website. Thank you to everyone who volunteered their time for this project.

#### **EPG summer 2018**

The EPG program was run experimentally for the first time summer 2017. This summer will be the first time the program is running as accredited. If you are interested in the program or having your technician participate please email Sam Minnema at [samuel.minnema@pcc.edu](mailto:samuel.minnema@pcc.edu) or Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu). The maximum capacity for this program is 10-12 students. If you are interested in donating equipment to the EPG program contact Sam Minnema at [samuel.minnema@pcc.edu](mailto:samuel.minnema@pcc.edu). If you are interested in meeting with summer graduates contact Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

#### **EPG Summer 2018 Class Schedule**

EPG 101 Electrical Ind. Safety and Tooling	June 25 <sup>th</sup> – June 29 <sup>th</sup>	7am – 4pm
EPG 102 AC/DC Theory	July 2 <sup>nd</sup> – July 18 <sup>th</sup>	7am – 3pm
EPG 104 Generator, Alternator, and Motor Fund.	July 19 <sup>th</sup> – Aug 7 <sup>th</sup>	7am – 3pm
EPG 103 Engine System	Aug 8 <sup>th</sup> – Aug 27 <sup>th</sup>	7am – 3pm
EPG 106 Instruments, Controls, and Protection	Aug 28 <sup>th</sup> – Sept 13 <sup>th</sup>	7am – 3pm

#### **EPG Fall 2018 Class Schedule**

EPG 105 Generator Installation and Application	Sept 25 <sup>th</sup> – Oct 3 <sup>rd</sup>	7am – 1:45pm
EPG 107 Troubleshooting and Diagnostics	Oct 4 <sup>th</sup> – Oct 19 <sup>th</sup>	7am – 3pm

#### **Skills USA**

Skills USA is taking place on April 21<sup>st</sup> from 8am -12pm at the Columbia Caterpillar. This years they are expecting 25 students competing.

#### **Recognition of donations**

We are always looking for donations. Donations to the PCC Diesel program are tax deductible. If you have anything you would like to donate please contact Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

**Other**

OTA

Diesel student C. Hall placed second at OTA competition. They had many student volunteers from the PCC Diesel program and the help was really appreciated.

Diesel Day – May 4<sup>th</sup>

This year's Diesel Day was a **huge success** bringing in over 240 students along with many counselors and instructors. Vendors participating this year set up on May 3<sup>rd</sup> or early in the morning on the day of the event. Thank you to all the vendors who participated, donated, and contributed resources to this year's Diesel Day.

**Date of next meeting**

October 19<sup>th</sup> 2018

Meeting Adjourned at 1 pm.

Diesel Advisory minutes  
10-19-18

**Attendance**

X	James Albright	X	Jim Smith	X	Rob Berovic	Colby Botts
	Rick Buckingham		Mike Conley		Mike Conway	Jennifer Nedron
X	Brian Dilitto	X	Russ Dunnington		Eric Stanton	Anthony Brown
X	Abe Estimada	X	Brendan Boyce		Brian Fryer	Irene Giustini
	John Hamel	X	Steve Lepschat		Michael Maine	Randy Maine
	Allen Nick		Brody Meyers		Trace Phillis	Tyler Phillis
	Bob Phipps		Randy Scott		Max Smith	X Pat Thomas
	Stefanie Thomas		Kristin Thomas	X	Tim Snow	X Jon Williams
	Tamara Williams	X	Mike Vallery	X	Steve Yager	Sam Minnema
	Lowell McMurray	X	Larry Phillips		Leroy Feldman	Larisa Felty
X	Tom Keyser		Ray Schmidt		Randy Shelton	Isaiah Horton
	Cassie Shearholdt	X	Chip Shields		Dan Zenger	X Mike Patten
X	Robert Lopez	X	Jacob Nichols			

**Called meeting to order**  
Called to order at 12:06 pm by Max Smith

**Approval of the minutes**  
Approved unanimously as written

**Welcome Mike Patten**  
Mike Patten is our new full time temporary instructional support technician for the Diesel shop tool room. Mike is a previous student of the Diesel Technology program.

**Enrollment Report**  
The Diesel program is up to 71 full and part time students, which is only slightly down from last year when we had 75. The enrollment at Portland Community College is down slightly across the district. The program maximum capacity is roughly 80 full time students although we have handled more in past years.

**Skills USA up-date**  
M. Davis was the PCC Diesel student who placed first in the Skills USA competition. Davis went on to compete in the SkillsUSA Nationals Competition in Louisville, KY where he placed 11<sup>th</sup> overall. Davis accomplished receiving zero reductions for safety. The next competition should be held around March 2019.

**Diesel Day up-date**

Diesel day is usually schedule for the first Friday of May. We are always looking for new ideas and opened up the floor to the advisory for suggestions. Suggestions included more space to move around between equipment, possibly integrating a timed course for students to move around, and even including a simulator, which would decrease the risk of injury. At this time, we are talking to building construction about using their space to use machines in the dirt.

**Get Ahead/ Daimler**

The Get Ahead program is an online test bank for diesel engines. Many diesel industries use these same tests. These certifications follow the students on to their next job. Out of 174 participants in the Get Ahead program, the PCC Diesel Technology program placed 10<sup>th</sup>.

For our placement, we have the opportunity to get a truck up to \$45,000, which the cost will be split three ways with PCC Diesel program paying 1/3 of the final cost. We will also receive up to \$20,000 in DTNA custom-built training aids and ten free subscriptions for Diagnostic Link, which will save us around \$200 each.

Thank you to McCoy Freightliner and Daimler for your support of the PCC Diesel Technology Program.

**Diesel EPG position**

Sam Minnema is the current Diesel EPG instructor. However, he was originally to begin the ThinkBIG EPG program. Now that the ThinkBIG EPG program will be launching, we are hiring another instructor to teach the Diesel EPG program. The new Diesel EPG instructor will co-teach with Sam in summer 2019 before taking over instruction.

**Instructional support position**

The Instructional Support Technician IV - Diesel Technology position is still open. This position is not only assisting in the tool room with orders and repairs but also supporting students in the lab. This position will close once sufficient qualified applications have been received.

**Junior Senior Day**

In recent years, there has been an increasing advocacy for CTE programs. Next year we would like to bring back the Junior Senior day. We are shooting for February 8<sup>th</sup>, 2018 to hold this event. We would like to bring in machines for the students to see. We would need 12-16 industry representatives, including technicians, for the panels. It was suggested to have an instructor assigned to each panel group who can facilitate meetings to discuss topics before the events to cut down on repeating topics. Other suggestions included have the industry panel talk about scholarships and internships to help students succeed during their education. We have already begun to compile a list of industry partners. If you have not contacted Russ yet to express interest in participating in this event or if you are interest in providing raffled items, please contact Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

There was a large interest in beginning a similar even to Junior Senior Day but geared towards Veterans, this is something we will be working on in upcoming meetings.

**New facility**

ThinkBIG and ThinkBIG EPG will be moving into a new facility on the Rock Creek campus by approximately fall 2020. Should nothing change, Diesel is slated to move into ThinkBIG's current space.

**Recognition of donations**

Modern Machinery - three engines, two after treatment systems, and hydraulic components

Bobcat Company - Three consignment machines [E42, E55, T870] and Bobcat remote start/communication tool

LKQ - Assorted Cummins ISX electronic components

Peterson - Two Chelsea PTO units

Thank you for all the donations to the Diesel Technology program. Each donation greatly helps students succeed in this program. If you are interested in donating to the Diesel Technology program, please contact Russ Dunnington at [rdunning@pcc.edu](mailto:rdunning@pcc.edu).

**Other business**

The Diesel Technology 5-year program review is coming up on January 25<sup>th</sup> 2019 from 9 -11 am. The location will most likely be in one of the Diesel classroom. The industry is invited to participate in this presentation.

OTA Maintenance Fair in Wilsonville, Oregon on March 29<sup>th</sup> 2019

SuperTech Competition in Wilsonville, Oregon on March 30<sup>th</sup> 2019

**Date of next meeting**

January 18<sup>th</sup> 2019

Adjourned at 1:27 pm

Appendix B: ASE Student Certification Results for 2014-2018

**2014 ASE Student Certification Testing Summary**

Target	70%
Total Categories	23
Categories below target *	10
Number of tests taken	122
Percentage Pass (50% = Pass)	88%
Percentage Fail (50% = Pass)	12%
Number of students in sample	32
Number of students surpassing target	26

<b>Diesel Engines</b>	<b>Avg.</b>
General	61% *
Cylinder Head & Valve Train	77%
Engine Block	80%
Lubrication System	66% *
Cooling System	73%
Air Induction, Exhaust, Engine Brakes	70%
Fuel System	71%

<b>Electrical &amp; Electronic Systems</b>	
General	76%
Battery	69% *
Starting Systems	72%
Charging Systems Diagnostics & Repair	71%
Lighting Systems	74%
Gauges & Warning Devices	76%
Related Electrical Systems	75%

<b>Brakes</b>	
Air Brakes	59% *
Hydraulic Brakes	72%
Air & Hydraulic ABS & ATC	67% *
Wheel Bearings	59% *

<b>Steering &amp; Suspensions</b>	
Steering Systems	70% *
Suspension Systems	68% *
Alignment Diag. & Adjustment, Repair	57% *
Wheels & Tires	69% *
Frames & Coupling Devices	85%

**Year-on-Year Comparison**

PCC Nationwide Percentile Ranking	<b>Current</b>	<b>2013</b>
Diesel Engines	78	83
Electrical & Electronic Systems	80	94
Brakes	75	87
Steering & Suspension Systems	83	77

## 2015 ASE Student Certification Testing Summary

Target	70%	
Total Categories	23	
Categories below target *	4	
Number of tests taken	100	
Percentage Pass (50% = Pass)	91%	
Percentage Fail (50% = Pass)	9%	
Number of students in sample	25	
Number of students surpassing target	15	
	<b>Avg.</b>	<b>ASE Rank</b>
<b>Diesel Engines</b>		89%
General	64% *	
Cylinder Head & Valve Train	73%	
Engine Block	71%	
Lubrication System	74%	
Cooling System	82%	
Air Induction, Exhaust, Engine Brakes	79%	
Fuel System	82%	
<b>Electrical &amp; Electronic Systems</b>		93%
General	84%	
Battery	75%	
Starting Systems	81%	
Charging Systems Diagnostics & Repair	76%	
Lighting Systems	74%	
Gauges & Warning Devices	86%	
Related Electrical Systems	80%	
<b>Brakes</b>		90%
Air Brakes	68% *	
Hydraulic Brakes	75%	
Air & Hydraulic ABS & ATC	73%	
Wheel Bearings	73%	
<b>Steering &amp; Suspensions</b>		89%
Steering Systems	74%	
Suspension Systems	71%	
Alignment Diag. & Adjustment, Repair	61% *	
Wheels & Tires	66% *	
Frames & Coupling Devices	88%	

### Year-on-Year Comparison

PCC Nationwide Percentile Ranking	2015	2014	2013
Diesel Engines	89%	78%	83%
Electrical & Electronic Systems	93%	80%	94%
Brakes	90%	75%	87%
Steering & Suspension Systems	89%	83%	77%

## 2016 ASE Student Certification Testing Summary

Target	70%
Total Categories	23
Categories below target *	9
Number of tests taken	164
Percentage Pass (50% = Pass)	96%
Percentage Fail (50% = Pass)	4%
Number of students in sample	45

	Avg.	ASE Rank
<b>Diesel Engines</b>		86%
General	65% *	
Cylinder Head & Valve Train	70%	
Engine Block	74%	
Lubrication System	73%	
Cooling System	70%	
Air Induction, Exhaust, Engine Brakes	81%	
Fuel System	78%	
<b>Electrical &amp; Electronic Systems</b>		84%
General	80%	
Battery	71%	
Starting Systems	77%	
Charging Systems Diagnostics & Repair	72%	
Lighting Systems	59% *	
Gauges & Warning Devices	71%	
Related Electrical Systems	77%	
<b>Brakes</b>		88%
Air Brakes	67% *	
Hydraulic Brakes	67% *	
Air & Hydraulic ABS & ATC	67% *	
Wheel Bearings	73%	
<b>Steering &amp; Suspensions</b>		83%
Steering Systems	67% *	
Suspension Systems	67% *	
Alignment Diag. & Adjustment, Repair	58% *	
Wheels & Tires	64% *	
Frames & Coupling Devices	81%	

### Year-on-Year Comparison

PCC Percentile Ranking, Nationwide	2016	2015	2014	2013
Diesel Engines	86%	89%	78%	83%
Electrical & Electronic Systems	84%	93%	80%	94%
Brakes	88%	90%	75%	87%
Steering & Suspension Systems	83%	89%	83%	77%

## 2017 ASE Student Certification Testing Summary

Target	70%
Total Categories	23
Categories below target *	5
Number of tests taken	125
Percentage Pass (50% = Pass)	97%
Percentage Fail (50% = Pass)	3%
Number of students in sample	45

	Avg.	ASE Rank (Nationwide)
<b>Diesel Engines</b>		90%
General	74%	
Cylinder Head & Valve Train	79%	
Engine Block	93%	
Lubrication System	67% *	
Cooling System	78%	
Air Induction, Exhaust, Engine Brakes	79%	
Fuel System	76%	
<b>Electrical &amp; Electronic Systems</b>		92%
General	86%	
Battery	85%	
Starting Systems	80%	
Charging Systems Diagnostics & Repair	85%	
Lighting Systems	71%	
Gauges & Warning Devices	79%	
Related Electrical Systems	86%	
<b>Brakes</b>		91%
Air Brakes	70% *	
Hydraulic Brakes	72%	
Air & Hydraulic ABS & ATC	78%	
Wheel Bearings	77%	
<b>Steering &amp; Suspensions</b>		88%
Steering Systems	68% *	
Suspension Systems	73%	
Alignment Diag. & Adjustment, Repair	65% *	
Wheels & Tires	66% *	
Frames & Coupling Devices	75%	

### Year-on-Year Comparison

PCC Percentile Ranking, Nationwide	2017	2016	2015	2014
Diesel Engines	90%	86%	89%	78%
Electrical & Electronic Systems	92%	84%	93%	80%
Brakes	91%	88%	90%	75%
Steering & Suspension Systems	88%	83%	89%	83%

## 2018 ASE Student Certification Testing Summary

Target	70%
Total Categories	23
Categories below target *	7
Number of tests taken	109
Percentage Pass (50% = Pass)	91%
Percentage Fail (50% = Pass)	9%
Number of students in sample	46

	Avg.	ASE Rank
<b>Diesel Engines</b>		85%
General	74.9%	
Cylinder Head & Valve Train	72.0%	
Engine Block	78.7%	
Lubrication System	74.0%	
Cooling System	74.3%	
Air Induction, Exhaust, Engine Brakes	70.3%	
Fuel System	76.0%	
<b>Electrical &amp; Electronic Systems</b>		89%
General	81.6%	
Battery	75.7%	
Starting Systems	69.7% *	
Charging Systems Diagnostics & Repair	79.5%	
Lighting Systems	71.1%	
Gauges & Warning Devices	78.3%	
Related Electrical Systems	75.2%	
<b>Brakes</b>		79%
Air Brakes	65.6% *	
Hydraulic Brakes	65.8% *	
Air & Hydraulic ABS & ATC	74.6%	
Wheel Bearings	72.5%	
<b>Steering &amp; Suspensions</b>		76%
Steering Systems	65.8% *	
Suspension Systems	70.8%	
Alignment Diag. & Adjustment, Repair	61.5% *	
Wheels & Tires	67.5% *	
Frames & Coupling Devices	65.0% *	

### Year-on-Year Comparison

PCC Percentile Ranking, Nationwide	2018	2017	2016	2015
Diesel Engines	85%	90%	86%	89%
Electrical & Electronic Systems	89%	92%	84%	93%
Brakes	79%	91%	88%	90%
Steering & Suspension Systems	76%	88%	83%	89%

Appendix C: ASE Student Certification Interpretation Guide

**Medium / Heavy Truck Percentile Rank Table – 2018**

Number Correct	Truck Diesel Engines (DE)	Truck Brakes (TB)	Truck Susp & Steering (TS)	Truck Elect/Elect Systems (TE)	Number Correct
0-5	1	1	1	1	0-5
6	1	1	1	1	6
7	1	2	1	2	7
8	1	3	3	3	8
9	2	6	6	5	9
10	4	10	8	7	10
11	5	14	12	10	11
12	7	19	16	13	12
13	11	24	21	17	13
14	15	28	25	21	14
15	19	34	31	25	15
16	23	41	36	29	16
17	27	46	42	34	17
18	31	50	48	39	18
19	36	55	55	44	19
20	41	59	60	47	20
21	45	63	64	52	21
22	51	67	69	56	22
23	56	71	73	62	23
24	60	75	76	66	24
25	65	79	80	71	25
26	69	82	83	76	26
27	73	84	86	79	27
28	77	87	89	83	28
29	81	90	91	86	29
30	85	92	93	89	30
31	88	94	95	91	31
32	91	96	96	93	32
33	94	97	97	96	33
34	96	98	98	97	34
35	97	99	99	98	35
36	98	99	99	99	36
37	99	99	99	99	37
38	99	99	99	99	38
39	99	99	99	99	39
40	99	99	99	99	40

**How To Use This Table**

This table provides percentiles for interpreting tests administered in the spring or fall of 2018. A percentile is the percentage of students who scored at or below a given score interval.

To use the table, find the student's Number Correct score for a given test in the left (or far right) column, and then look over to that test's column to find the percentile equivalent. For example, if a student scored 25 correct on Diesel Engines, first find 25 in the left column. Then look to the right under the Diesel Engines heading, and you will find 65. A score of 25 on the Diesel Engines test is at the 65<sup>th</sup> percentile of the national population of students who took this exam in the spring of 2018.

## Appendix D: Safety Assessment Results 2014-2018

Please note that some categories are assessed every other year as determined by our schedule.

### Spring 2014 Safety Assessment

#### Safety Violations by Class

DS104/DS204	19
DS102/DS202	14
DS105/DS205	8
DS106/DS206	3
Total	44

#### Safety Violations by Category

(C) Coveralls	45%
(B) Boots	16%
(S) Safety Glasses	39%
(H) Hearing Protection	0%
(G) Gloves	0%
(E) Equipment Operation	0%
(SH) Slip Hazards	0%
(L) Lockout/Tagout	0%
(W) Wheel Chocks	0%
(O) Other	0%

## 2015 Safety & Work Ethic Assessment Statistics

Safety Violations by Category		%
Coveralls	6	15%
Boots	2	5%
Safety Glasses	27	69%
Hearing Protection	0	0%
Gloves	0	0%
Equipment Operation	4	10%
Slip / Trip Hazards	0	0%
Lockout / Tagout	0	0%
Wheel Chocks	0	0%
Other	0	0%
Total	39	

### Work Ethic Violations by Category

Absent	87	2.3%
Late	105	2.7%
Leave Early	20	0.5%
Total	212	5.5%

\*The percentages is calculated using the total number of student attendance days.

Clean-up	2	13.3%
Tool & Lit. Usage	0	0.0%
Personal Tools	1	6.7%
Use of Class Time	3	20.0%
Respect for others	9	60.0%
Total	15	100%

### 2015-2016 Safety & Work Ethic Assessment Statistics: All Classes, All Terms

Safety Violations by Category	Totals	
Coveralls	14	18.4%
Boots	15	19.7%
Safety Glasses	46	60.5%
Hearing Protection	0	NA
Gloves	0	NA
Equipment Operation	1	1.3%
Slip / Trip Hazards	0	NA
Lockout / Tagout	0	NA
Wheel Chocks	0	NA
Other	0	NA
<b>Total</b>	<b>76</b>	

Work Ethic Violations by Category	Totals	
Absent - Unexcused	0	0.0%
Absent - Excused	0	0.0%
Late - Unexcused	0	0.0%
Late - Excused	0	0.0%
Leave Early - Unexcused	0	0.0%
Leave Early - Excused	0	0.0%
<b>Total</b>	<b>0</b>	<b>0.0%</b>

Clean-up	0	NA
Tool & Lit. Usage	0	NA
Personal Tools	0	NA
Use of Class Time	0	NA
Respect for others	0	NA
<b>Total</b>	<b>0</b>	<b>0%</b>

## 2016-2017 Safety & Work Ethic Assessment Statistics: All Classes, All Terms

Safety Violations by Category	Totals	
Coveralls	11	11.0%
Boots	10	10.0%
Safety Glasses	58	58.0%
Hearing Protection	3	3.0%
Gloves	1	1.0%
Equipment Operation	0	NA
Slip / Trip Hazards	5	5.0%
Lockout / Tagout	0	NA
Wheel Chocks	7	7.0%
Other	5	5.0%
<b>Total</b>	<b>100</b>	

Work Ethic Violations by Category	Totals	
Absent - Unexcused	287	3.2%
Absent - Excused	119	1.3%
Late - Unexcused	367	4.1%
Late - Excused	25	0.3%
Leave Early - Unexcused	78	0.9%
Leave Early - Excused	17	0.2%
<b>Total</b>	<b>893</b>	<b>9.7%</b>

Clean-up	13	14%
Tool & Lit. Usage	19	20%
Personal Tools	5	5%
Use of Class Time	51	53%
Respect for others	8	8%
<b>Total</b>	<b>96</b>	<b>100%</b>

Please note that we changed our assessment during the 2017-2018 academic year to gather more data regarding failure rates. We are trying to gauge the impact of our attendance policy on student success.

**2017-2018 Safety & Work Ethic Assessment Statistics: All Classes, All Terms**

<b>Safety Violations by Category</b>	<b>Totals</b>	
Coveralls	16	29.1%
Boots	4	7.3%
Safety Glasses	24	43.6%
Hearing Protection	0	NA
Gloves	0	NA
Equipment Operation	1	1.8%
Slip / Trip Hazards	0	NA
Lockout / Tagout	0	NA
Wheel Chocks	8	14.5%
Other	2	3.6%
<b>Total</b>	<b>55</b>	<b>100%</b>

<b>Work Ethic Violations by Category</b>	<b>Totals</b>	
Absent - Unexcused	235	2.8%
Absent - Excused	127	1.5%
Late - Unexcused	335	3.9%
Late - Excused	28	0.3%
Leave Early - Unexcused	54	0.6%
Leave Early - Excused	16	0.2%
<b>Total</b>	<b>795</b>	<b>9.1%</b>

Clean-up	7	11%
Tool & Lit. Usage	8	13%
Personal Tools	19	31%
Use of Class Time	19	31%
Respect for others	9	15%
<b>Total</b>	<b>62</b>	<b>100%</b>

Number of grade deductions	<b>Total</b>	33
Number of failing grades for the year	<b>Total</b>	31
Number of class related injuries	<b>Total</b>	0

Appendix E: Wage and Employment Information

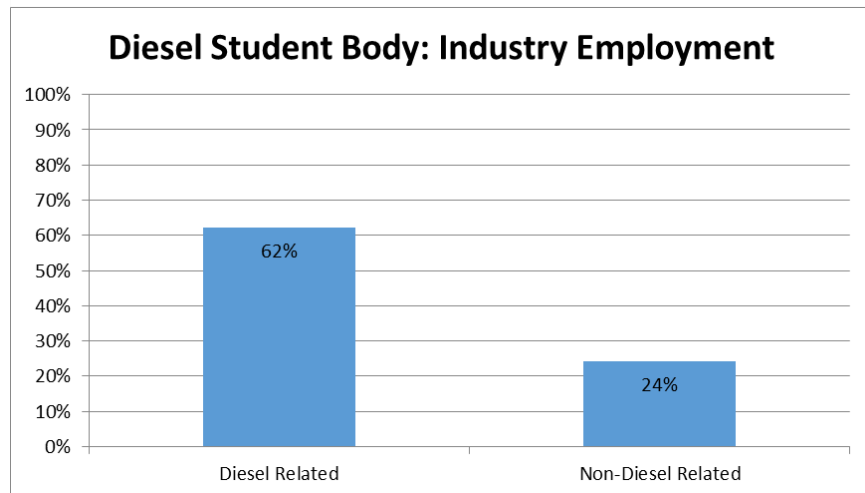
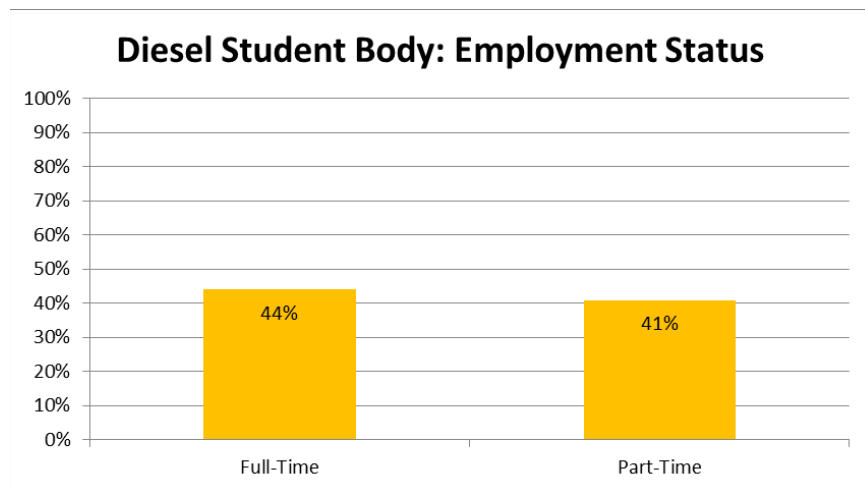
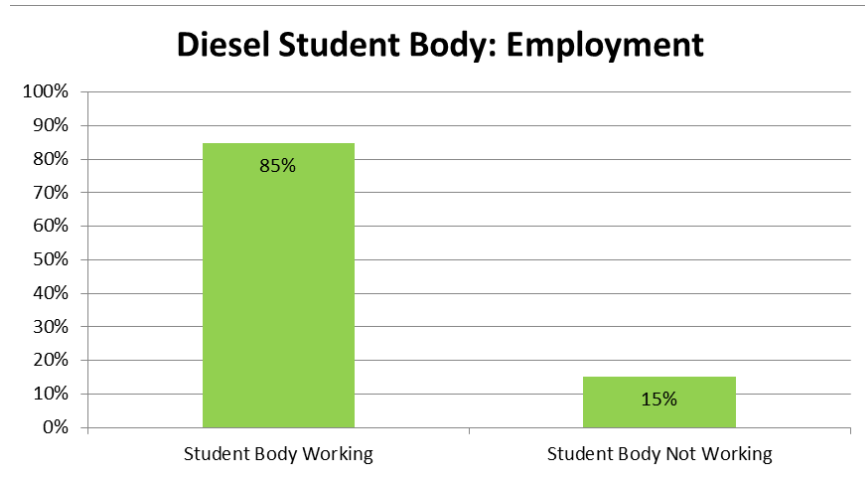
**Nationwide Employment Projections**

EMPLOYMENT				PROJECTED ANNUAL OPENINGS			WAGES	
2016	2026	TOTAL	% GROWTH	GROWTH	REPLACE	TOTAL	MEDIAN	ANNUAL
<b>Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)</b>								
278,800	304,600	25,800	9.25%	3700	22,100	25800	\$ 23.53	\$ 48,942.40
<b>Farm Equipment Mechanics (49-3041)</b>								
42,500	45,700	3,200	7.53%	500	2,700	3200	\$ 19.22	\$ 39,977.60
<b>Mobile Heavy Equipment Mechanics, Except Engines (49-3042)</b>								
127,400	137,900	10,500	8.24%	1500	9,000	10500	\$ 24.62	\$ 51,209.60
<b>Supervisors and Managers of Mechanics, Installers, and Repairers (49-1011)</b>								
462,200	495,000	32,800	7.10%	4700	28,100	32800	\$ 31.05	\$ 64,584.00

**OLMIS Statewide Projections for Diesel Technicians, Supervisors & Managers**

EMPLOYMENT				PROJECTED ANNUAL OPENINGS			WAGES	
2017	2027	TOTAL	% GROWTH	GROWTH	REPLACE	TOTAL	MEDIAN	ANNUAL
<b>Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)</b>								
4,155	4,680	525	12.64%	525	3875	4400	\$ 22.15	\$ 46,072.00
<b>Farm Equipment Mechanics (49-3041)</b>								
1,275	1,425	150	11.76%	150	1271	1421	\$ 18.83	\$ 39,166.40
<b>Mobile Heavy Equipment Mechanics, Except Engines (49-3042)</b>								
2,193	2,416	223	10.17%	223	2,169	2392	\$24.23	\$ 50,398.40
<b>Supervisors and Managers of Mechanics, Installers, and Repairers (49-1011)</b>								
4,236	4,699	463	10.93%	463	4,213	4676	\$ 31.76	\$ 66,060.80

## Appendix F: Student Body Employment Information



# Diesel Day

At Portland Community College  
Friday, May 3 2019  
9 a.m.—2 p.m.

The Diesel Service Technology Department, local heavy equipment and heavy-duty truck companies are hosting their annual “Diesel Day”. The event will be at Portland Community College, Rock Creek Campus, Building 2, Room 117.

Hands on learning sessions will be offered for students who wish to find out what today’s Diesel Technicians do in the field.

These sessions will include:

- Air Conditioning Trouble Shooting
- Anti-lock Braking Systems
- Bobcat Skid Steer Operation
- Electrical Component Troubleshooting
- Industry roundtable sessions
- And Much, Much More

Come hear what local diesel employers have to say about their industry as they display the newest heavy equipment and medium/heavy-duty trucks.

Free BBQ lunch and door prizes!  
Come drive the Bobcat!  
Lots of fun demos on big equipment!





**Portland Community College  
Diesel Service Technology  
Junior Senior Day  
Friday December 7, 2007  
10:00 AM - 1:00 PM**

The Diesel Service Technology Department, Northwest Diesel Industry Council and local diesel service companies are hosting a Junior Senior day for high school students interested in pursuing a career in Diesel Service Technology. The event will be at Portland Community College, Rock Creek Campus, building 2, room 117.

This is an industry-sponsored event with groups representing different areas of Diesel Service Technology. The four groups will be:

- **Full Service Truck**
- **Engines and Power Generation**
- **Heavy Equipment and Material Handling**
- **Agriculture Equipment**

Come hear what Diesel Technician employers have to say about this challenging and rewarding field. The schedule is as follows:

10:00 – 10:25 Welcome and Program Overview  
10:30 – 10:55 Session 1  
11:00 – 11:25 Session 2  
11:30 – 11:55 Lunch  
12:00 – 12:25 Session 3  
12:30 – 12:55 Session 4

**A free lunch will be provided for all who attend.**

Space is limited so reserve a spot as soon as possible by calling Russ Dunnington at 503-614-7488. Transportation is limited but may be provided for schools bringing large groups.