**Sinclair Community College - Continuous Improvement Annual Update 2010-11**

**Program:** Automotive Technology

**Section I: Trend Data**

1. **Program Trend Data**

Over the last 4 years the automotive technology programs have experienced “student program counts” in the 700’s; the most of any SME program in the division; the fall quarter 2010 was the highest in its history at 787. In 2008 General Motors and Chrysler Corporations went through bankruptcies. This caused the GM ASEP and Chrysler CAP programs to have one of the lowest enrollments in Sinclair’s history. Since that time the ASEP and CAP programs have steadily grown to previous levels. The automotive technology programs have grown to a 30th day FTE count of 247 in fall and 242 in winter quarters, 2010. This exceeded projections from 5%-11%.

Study of the enrollment data for age and ethnicity for fall 2006 as compared to the

Fall 2010, year shows an increase of overall student age levels from 23 to 27.

Ethnicity data for minority automotive students shows a 51% increase from fall 2006

to 2010. Minorities make up 25% of all enrollees in the automotive programs.

The success rate for the automotive department has consistently been 81%-88%

over the last 5 years of trend data. This exceeds the SME division rate by approximately

15% and the overall college success rate by approximately 10%.

Graduation rates have been fairly stable over the 5 year data trend with 123 degrees/ certificates awarded in 2007 compared with130 in 2010. There was a dip in the 2009 rate which was 110.

1. **Interpretation and Analysis of Trend Data** *Suggestions of questions that might be addressed in this section: What trends do you see in the above data? Are there internal or external factors that account for these trends? What are the implications for the program or department? What actions have the department taken that have influenced these trends? What strategies will the department implement as a result of this data?*

Over the last 2 years the automotive industry has gone through very distressed financial conditions. The GM and Chrysler bankruptcies caused the Sinclair automotive programs to experience a dip in enrollment throughout 2008. However, times have changed; the industry is now picking up speed. Looking at the high number of student program counts for the department this year, I believe it is an indication that students find the automotive programs a viable avenue for job opportunities.

Another indication that students are looking to the automotive programs to find jobs is the increased overall average age of the enrolled students from 23 to 27 years. Adults that have lost their job and are older are coming back to college for retraining in new fields.

The automotive industry is still a viable field for obtaining a job. Students know that and are therefore enrolling in numbers- FTE counts of 263 in fall quarter and 242 in winter quarter, 2010.

Success rates for students in the automotive programs have been well above college and SME division averages. The department average of 81%-88% is an indication that faculty are employing many teaching tactics that help students to be successful in their programs.

Another indicator of student success is described in the past year “Sinclair Graduate Surveys”. Surveys indicate very high approval ratings for the faculty, the course content relevancy and preparing students for the workforce. Surveys indicate that 94% of the students are working and that 72% are working in their field of study.

An Employer Survey was administered in 2009 to businesses that employed Sinclair automotive graduates. The survey indicated that students performed very well in the work environment. 90% of employers stated that they would hire a Sinclair automotive student in the future.

The graduation rate for automotive students each year continues to be very high as compared to any other department in the SME division. AY 05-06 = 153 degrees and certificates and 130 for AY 09-10. I attribute these numbers due to the fact that the department works very closely with the students to keep them on track for graduation. The corporate programs are very structured and lead to high student graduation rates.

**Section II: Progress Since the Most Recent Review**

1. What was the fiscal year of the most recent Program Review for this program?

AY 07-08

1. Briefly summarize the goals that were listed in Section IV part E of the most recent Program Review Self-Study (this section of the Self-Study asks “What are the department’s/program’s goals and rationale for expanding and improving student learning, including new courses, programs, delivery formats and locations”)?
2. Develop and implement a Collision program and possibly a Diesel program.
3. Hybrid vehicle curriculum development and training
4. Service Learning project for the community
5. Have these goals changed since your last Program Review Self-Study?  If so, please describe the changes.
6. The collision and diesel program are not feasible at this time due to financial constraints of the college and state.
7. No changes in hybrid technology goals
8. No changes in Service learning initiatives
9. A new goal that we have implemented due to recommendations of the review committee is: Reviewing all automotive courses so that general education outcomes will be supported and evaluated in each class.
10. What progress has been made toward meeting any of the goals listed above in the past year?
11. No progress – deleted
12. The hybrid technology development has been progressing very well. We received an NSF grant in 2006, 2007 and again in 2009. For 2009, Sinclair received a three year NSF grant in the amount of $791,000 to continue development and training for automotive instructors across the nation on Hybrid Vehicle Technology. To date we have instituted. Four – one week college instructor workshops on hybrid vehicles, training over 150 instructors from Alaska to Florida.

June, 2010 we also offered a three day workshop for vocational high school instructors training 38 instructors from a three state area.

Much work has gone into the development of instructional materials, Power Points and equipment acquisitions to perform the training. A website has been established to share worksheets, power points and other course material with participants of the workshops. The participants have also shared content that they were willing to share with others being available on the www.sinclairhybrid.org website.

1. The department has had two service learning projects that have lead to major learning opportunities for students.
   1. The “Special Wish foundation” project in which a 1983 Chevrolet Truck was rebuilt and restored for a young man who has a terminal illness. Many hours of work, donations and student participation went into it restoration. News articles were written about the project. This occurred in 2007-2008
   2. Recently the department was involved in helping out the “Homeless Hotline of Greater Cincinnati” in rebuilding an automatic transmission and fuel system for their 1987 Ram Van. Eight students in John Porter’s “Automatic Transmission” class rebuilt the transmission and 4 students from James Truxal’s “Engine Performance” class rebuilt the carburetor. This project was completed at the end of the fall quarter 2010.

The department is continuing to look for other opportunities as they come along.

1. As of this year 2010, the department has implemented general education activities for 95% of all automotive classes in the programs. These activities encompass written assignments, oral communication or other pertinent activities that would support these outcomes. The outcomes are part of the student’s final grade for a class.

1. What Recommendations for Action were made by the review team to the most recent Program Review? What progress has been made towards meeting these recommendations in the past year?
2. The department should review the college’s general education outcomes required for all degree programs and strengthen its inclusion of general education throughout the automotive curriculum.
   1. The department has made great strides towards implementing general education activities into each automotive course. 95% of all automotive courses have these activities in place which are part of a students’ final grade for a class.
3. Examine the department’s overall student retention and analyze where and why students leave the program.
   1. A RAR report has been specifically run for the automotive department during the fall quarter 2010. The report shows that the automotive department from quarter to quarter has a 15% attrition rate which is half of what the college attrition rate of 30% is for the college. The fall quarter to fall quarter of the following year shows a 31% attrition rate versus the college overall rate of 50%. The automotive program has very strong personal contact with students on a quarter by quarter basis in helping them to schedule and deal with problems that may hinder their graduation.

The department knows fairly accurately the reasons students drop the automotive classes or the program – exit interviews and student surveys have been helpful in determining the reasons.

1. Increase the diversity of the department’s faculty and student population as opportunities arise.
   1. Diversity in the automotive faculty continues to be a problem since very few minority instructors are available. The whole field of automotive instructor availability is one that is a problem in the field of automotive training across the nation.
2. Given the department’s space limitations in the existing facility, assessment of growth goals for the future is warranted. Examine the likely job market over the next five years and determine whether enrollment growth is realistic.
   1. According to the U.S. Bureau of Labor Statistics (BLS), 2010 report, the automotive technician job market will continue to grow over the next eight years. In 2008 the number of technicians in the industry was 736,000 across the nation. BLS is saying the job market will continue to slowly grow towards a predication of 771,000 technicians working in the field by 2018. That is a 35,000 job increase. That is still a strong market for job opportunities.

With those numbers as evidence and the continuing availability of jobs in the Dayton market, continued growth of the automotive program is justified.

While the Dayton community has been suffering economically and in job losses, the GM ASEP program, which requires internships, has shown a 100% placement rate for these students in 2010. The Honda program that does not require an internship has an 80% placement rate for those students in the program. All of this is proof of available automotive jobs.

**Section III: Assessment of Outcomes**

The Program Outcomes for this program are listed below. **At least one-third of your program outcomes must be assessed as part of this Annual Update, and across the next three years all of these program outcomes must be assessed at least once**.

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| --- | --- | --- | --- |
| **Automotive Technology** Program Outcomes | In which courses are these program outcomes addressed? | Which of these program outcomes were assessed during the last fiscal year? | Assessment Methods  Used |
| **1)** Engine Performance Troubleshooting, utilizing scan tool, scopes, DVOM. | AUT 245 |  |  |
| **2)** Chassis System diagnosis, Brake systems and ABS systems. | AUT 165 & 210 |  |  |
| **3)** Test engines for integrity, overhaul. | AUT 108 |  |  |
| **4)** Electrical System troubleshooting, schematic reading and circuit diagnosis*.* | AUT 124 & 125 |  | * ASE End of Program Exam |
| **5)** Heating and air conditioning system diagnosis, system operations, and climate control systems. | AUT 146 |  |  |
| **6)** Safety Management skill development; OSHA and environmental safety skill development. | All AUT Courses, OPT 211 |  |  |
| **7)** Fuel system diagnosis, emission control system diagnosis, fuel injection and PCM related systems. | AUT 115 |  | * ASE End of Program Exam |
| **8)** Manual transmission and driveline system diagnosis and repair, driveline and differentials. | AUT 142 |  |  |
| **9)** Automatic transmission systems diagnosis and repair, 4 wheel drive systems. | AUT 241 |  |  |
| **10)** Business Communication skills, computer customer operations skill development. | AUT 215 & 111, EDT 198, ENG Courses, COM 206 |  | * Performance Appraisals |
| **11)** Analytical problem-solving methods. | All AUT Courses, INT 141 |  | * Performance Appraisals |

a) For the assessment methods listed in the table above, what were the results? What changes are planned as a result of the data? How will you determine whether those changes had an impact?

Students that enrolled in the AUT 215 “Service Operations” course were assessed on their performance in the area of writing “repair orders”. They were also assessed on their ability to actively listen and speak to customers. A 10 point rubric was used to access the various skill areas as mentioned.

b) What other changes have been made in past years as a result of assessment of program outcomes? What evidence is there that these changes have had an impact?

As a result of lab test exams that were administered in the AUT 125 courses in 2008/09 (Electrical/Electronic Systems II) we discovered wide variations in exam scores from one class to another. Lab exams were the same between classes. There was a discrepancy that the department needed to examine. We looked at the content being taught in the lower level AUT 124 classes (Electrical/Electronic Systems I). We discovered that instructors varied on the emphasis of content areas for the class. While the content was covered in the classes, these variations cause students not to obtain the necessary fundamentals needed to perform well in the advanced electrical class, AUT 125.

As many as seven instructors teach the AUT 124 classes, many are part-time instructors. The department decided to look at the content for both electrical classes (AUT 124 & AUT 125) to determine the proper placement of content along with making sure all instructors emphasis the appropriate content. This, we determined, was the area for necessary changes for students to succeed in the advanced electrical course. The course toolboxes were revised and given to all part-time and full-time instructors that teach the classes. We looked at success rates for the AUT 125 classes for 08/09 and 09/10 and found an increase from74.74% to 79.66%.

1. Describe general education changes/improvements in your program/department during this past academic year (09-10).

We have implemented communication and written assignments into each of the automotive courses for all programs. As an adopted departmental policy, all automotive classes must have a general education component to the course curriculum.

The AUT 125 courses have implemented an oral presentation for which each student must researched an automotive topic and present to the whole class. The presentation is 5- 10% of a student’s grade for the course.

The AUT 115 courses utilize the internet in researching service information for the repair of vehicles specifically in the fuel delivery subject areas. Students are learning the processes and methods for searching the internet.

**Section IV: Improvement Efforts for the Fiscal Year**

1. **FY 09-10:** What other improvement efforts did the department make in FY 09-10?  How successful were these efforts?  What further efforts need to be made? If your department didn’t make improvement efforts during the fiscal year, discuss the strengths and weaknesses of the department over the last year and how the department plans to address them in the coming year.

The department added new technical content to each of the automotive classes. Hybrid technology was added to the AUT 125 courses. GM and Chrysler have come out of bankruptcy and are making profits again. The CAP and ASEP programs are improving in enrollment and job placement. Sinclair continues to have one of the largest ASEP classes in the nation for 2010. This was due to concerted efforts in recruiting to find dealer sponsorships for the beginning 2010 ASEP and CAP students.

1. **FY 10-11:** What improvement efforts does the department have planned for FY 10-11? How will you know whether you have been successful?

Improvement efforts continue to be in the area of incorporating new automotive technologies into the courses. A new “hybrid vehicle technology” course has been added to the curriculum ( AUT 230). This can presently be used as a program elective. The course was first offered during the fall quarter 2010 with 10 students enrolled. The student feedback for the course was very positive.

The department continues to work on incorporating general education outcomes into all of the automotive courses. Much progress have been made to this point, 95% of the automotive courses have some form of general educational requirement.

A new general education program outcome will be added. A student’s social, community and citizenship involvement will be assessed.

Questions regarding completion of the Annual Update? Please contact the Director of Curriculum and Assessment at 512-2789 to schedule a time to review the template and ask any questions.