**Sinclair Community College**

**Continuous Improvement Annual Update 2012-13**

**Please submit to your dean and the Provost’s Office no later than Oct. 1, 2012**

**Department:** 0568 – Automotive Technology

Year of Last Program Review: FY 2007-2008

Year of Next Program Review: FY 2014-2015

**Section I: Department Trend Data, Interpretation, and Analysis**

**Degree and Certificate Completion Trend Data – OVERALL SUMMARY**

Please provide an interpretation and analysis of the Degree and Certificate Completion Trend Data (Raw Data is located in Appendix A*): i.e. 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 department? What actions have the department taken that have influenced these trends? What strategies will the department implement as a result of this data?*

The automotive department's graduation rates have aways been very good. however there was a dip in the numbers that occurred during the depths of the recession 08/09. It is my belief that this was due to bankruptcy issues with Chrysler and General Motors, both of which were/are our partners in our ASEP and CAP programs. There problems became our problem, particulary in the areas of equipment and student enrollments. The automotive manufacturing industry was in decline during that year which caused parents and students to think the automotive service field was not a good area for job opportunities.

That was wrong thinking. The automotive service field maintained good job opportunities during those years. Students finally realized that and began coming back into the automotive programs which resulted in higher graduation rates in following years..

Student enrollments continue to be strong which will lead to higher numbers of degree and certificate graduates in years to come.

According to a powerpoint presentation by Dr. Johnson in 2012, he discussed the colleges overall graduation numbers. He showed the top 10 programs with the highest numbers. The automotive program placed 6th on that list.

The department would like to see a concerted effort by the college to specifically advertise programs; to go head to head with the private training organizations that are always advertising. We did this many years ago and it definitely boosted the automotive program enrollments.

Our current strategies of visiting automotive high school programs, racing events, career days and other activities needs to continue. It has a most profound affect on our enrollment numbers.

**Course Success Trend Data – OVERALL SUMMARY**

Please provide an interpretation and analysis of the Course Success Trend Data (Raw Data is located in Appendix A). Looking at the success rate data provided in the Appendix for each course, please discuss trends for high enrollment courses, courses used extensively by other departments, and courses where there have been substantial changes in success.

"Success rates" for students in the automotive program continue to be well above the college and SME division averages. The department averages of 85% - 88% is a good indication that faculty are employing good teaching techniques and working to help every student achieve success in their classes. Instructors work hard at making sure students attend all classes through established policies and expectations. They also call students if they are absent from class more then 2 or 3 times to determine their needs and to encourage them to attend class.

The beginning class, AUT 124 (1114) "Automotive Electrical/Electronics I", continues to show a steady 65% success rate over the 4 years of documented data. This is the lowest rated class in the program, all the rest are higher. While attempts to improve those numbers is ongoing, it is one of the more difficult classes for students to understand and pass.

The AUT 125 (2214) "Automotive Electrical/Electronics II" class continues to show a steady increase in "success rates" from 07/08 of 62.4% to 11/12 of 81.9%. I attribute that increase to changes in instructors' teaching techniques and to adjustments made in the curriculum. This is, again, one of the more difficult subjects for students to understand.

The programs excellent overall "Success Rates" of 87% illustrates one of the reasons for the department receiving the "Tomorrow's" Technician" School of the Year award in 2011.

Please provide any additional data and analysis that illustrates what is going on in the department (examples might include accreditation data, program data, benchmark data from national exams, course sequence completion, retention, demographic data, data on placement of graduates, graduate survey data, etc.)

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 they would hire a Sinclair automotive student in the future.

ASE End of program tests are administered to students in our AUT 215 (2250) capstone courses each year. These sample tests are example of the National ASE tests that is the standard in the industry by which technicians are certified. The overall test results for each of the 8 ASE areas are illustrated below.

Susp/Steer Brakes Elect Perform Repair Auto Axles HVAC

2012 Average 70% 72% 73% 73% 74% 65% 66% 71%

2011 Average 65% 71% 77% 76% 77% 66% 64% 72%

2010 Average 69% 67% 70% 69% 71% 59% 55% 66%

The results show a steady successful pass rate for all students that took the tests in all 8 areas. Results for 2012, does show a slight decrease in tests results in the area of "Electrical", Engine Performance" and "Engine Repair". The department may need to determine the areas of weakness and adjust curriculum accordingly.

FTE Comparison charts shows a 14th day count of 237.39 FTE for fall quarter 2011 and a 165.8 FTE for the current fall semester. While the FTE projections for the department was set at 188.3 for this fall, the 165.8 figure is higher then last years FTE numbers. (237.39 x 2/3 = 158.26). The colleges projections for this year were set too high.

The majority of classes were filled to capacity with a class count average of 18.36 overall. The class count average was set by the college to be 18.00 and the department met that goal.

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

Below are the goals from Section IV part E of your last Program Review Self-Study. Describe progress or changes made toward meeting each goal over the last year.

|  |  |  |
| --- | --- | --- |
| **GOALS** | **Status** | **Progress or Rationale for No Longer Applicable** |
| Develop and implement a Collision program and possibly a Diesel program. | In progress  Completed  No longer applicable | The collision and diesel program are not feasible at this time due to financial constraints of the college and state. |
| Hybrid vehicle curriculum development and training | In progress  Completed  No longer applicable | The NSF Hybrid grant will end May of 2013. We will have completed the curriculum and the objectives of the grant. We have detailed reports for each of the years of the project. The final report will be completed by May 2013. |
| Service Learning project for the community | In progress  Completed  No longer applicable | The various departments’ service learning projects have been ongoing.  This last year, Justin Morgan's AUT 215 class in the summer quarter, rebuilt a Dodge Stratus vehicle that was donated to a needy family through the "New Path" organization in Tipp City. Their was a front page article in the "Clarion" college newspaper, summer edition 2012, that discussed this project.  Another project that was performed during the fall quarter 2012, was the rebuilding of a 2004 Honda Accord automatic transmission. This service learning project was accomplished by students in the Honda AUT 241 transmission class. Again, this project helped students to learn about transmissions and also help out a needy family. |

Below are the Recommendations for Action made by the review team. Describe the progress or changes made toward meeting each recommendation over the last year.

|  |  |  |
| --- | --- | --- |
| **RECOMMENDATIONS** | **Status** | **Progress or Rationale for No Longer Applicable** |
| 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. General education competencies were notably missing from the program learning outcomes listed in the self-study report. While it is understandable that the department focuses a great deal of attention on ensuring students meet the technical competencies of the program, an associate’s degree program must also include careful attention to the college’s general education competencies. | In progress  Completed  No longer applicable | The department has implemented general education assignments in each course. Instructors are using a new Angel assessment tool that collects data in general education components for each student in the automotive program. Examples include: verbal communication, written communication, computer skills, citizenship, etc. |
| Examine the department’s overall student retention, and analyze where and why students leave the program. Identify opportunities to improve students’ persistence and success. | In progress  Completed  No longer applicable | A past RAR report has been specifically run for the automotive department that shows the automotive department has a 15% attrition rate which is half of what the college rate is presently - 30%. The automotive program maintains strong personal contact with students on an ongoing basis. These connections help in keeping students on track for graduation.  Exit interviews have been administered in the past to determine reasons for students leaving the program. The reasons vary from personal, to financial and to a realization that the field of study they have chosen is not right for them. These are the most common reasons from what our studies show.  The department does everything it can to help students with their studies by providing tutorial help. We also help students with their financial needs by making available a variety of scholarships and grants through the college.  As student needs arose the department has been flexible to resolve the issues. |
| While the department has a good foundation through data from Skill Manager to assess the overall progress of the program, it uses this tool at present primarily for the evaluation of individual students’ mastery of competencies. Understanding the collective achievement of its students through analysis of trend data from Skill Manager represents a significant opportunity for the department and one that should be pursued and reported on in annual updates. Evidence that the department uses this data to make changes and improvements in its programs should be part of these annual reports. | In progress  Completed  No longer applicable | The department is rolling out a new assessment tool through the college's Angel system. Jared Cutler and John Porter have designed the new system and it is being utilized now in a number of automotive courses. |
| Increase the diversity of the department’s faculty as opportunities to recruit new faculty arise. | In progress  Completed  No longer applicable | The nature of the automotive field of study, the majority of technicians and instructors in the nation are 95% caucasion. It is very difficult to find automotive instructors of diversityincluding women automotive instructors. There are less then 1%, women automotive instructors in the U.S. With the coming retirements of Steve Ash and Mike Garblik in 2013, the opportunity will again arise to try to hire instructors of diversity. |
| Given the department’s space limitations in the existing facility, assessment of growth goals for the future is warranted. In conjunction with Admissions Office personnel, assess the department’s usual practices for student recruitment. Consider differentiating Sinclair’s automotive program from others offered elsewhere. Use data to assess the effectiveness of the department’s multi-state recruitment efforts. | In progress  Completed  No longer applicable | At the disgression of the college, the opportunity is present to expand into programs such as Diesel Truck Technology and Automotive Collision Technology. These programs have been needed for years but facilties have not been available. Sinclair has somewhat missed the opportunity to establish a Diesel Technology program because Clark State College has just recently opened a new one on their campus this fall semester. |
| Examine the likely job market over the next five years and determine whether enrollment growth is realistic. Explore opportunities for other programs the department might offer at other sites, using research from RAR to validate employment demand. | In progress  Completed  No longer applicable | The job market is strong for the automotive service field. We continue to place students at coop work sites with very few problems. Dealerships are calling us wanting peoplefor their workforce.  According to the U.S. bureau of Labor Statistices (BLS), 2012 report the automotive technician job market continues to grow and over the next 8 years, the number of job openings will be around 35,000. The retirement increase over this period will drive much of the job openings. |

**Section III: Assessment of General Education & Degree Program Outcomes**

The Program Outcomes for the degrees are listed below. **All program outcomes must be assessed at least once during the 5 year Program Review cycle, and assessment of program outcomes must occur each year**.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **General Education Outcomes** | To which degree(s) is this program outcome related? | Year assessed or to be assessed. | Assessment Methods  Used | What were the assessment results?  (Please provide brief summary data) |
| Oral Communication | | All programs | **2011-2012** | Assessed using the Angel Assessment tool. | The overall percentage of 73% was determined by using the Angel assessment tool for the AUT 215 courses for 2011/12 |
| Written Communication | | All programs | **2011-2012** | Assessed using the Angel Assessment tool | The overall percentage of 82% was determined by using the Angel assessment tool for the AUT 215 and 230 courses for 2011/12 |
| Critical Thinking/Problem Solving | | All programs | **2012-2013** |  |  |
| Values/Citizenship/Community | | All programs | **2013-2014** |  |  |
| Computer Literacy | | All programs | **2014-2015** |  |  |
| Information Literacy | | All programs | **2015-2016** |  |  |
|  | |  |  |  |  |
| **Program Outcomes** | | To which course(s) is this program outcome related? | Year assessed or to be assessed. | Assessment Methods  Used | What were the assessment results?  (Please provide brief summary data) |
| Perform entry-level engine overhaul, precision measurements; perform machining and engine mechanical service. | | AUT 1102  AUT 1108  CAM 1109 | Assessed in FY 12-13 | ASE End of Program Exam | 2012 Averages - 73.5%  2011 Averages - 77%  2010 Averages - 71% |
| Diagnose fuel injection, delivery and emission control systems.  Utilize scan tools, scopes, DVOM meters and other test equipment in troubleshooting engine and drivability problems. | | AUT 1115  AUT 2215 | Assessed in FY 10-11 | ASE End of Program Exam |  |
| Diagnose and repair automatic transmission/transaxle systems, torque converters and 4 wheel drive/all wheel drive systems. | | AUT 2241 | Assessed in FY 11-12 | ASE End of Program Exam |  |
| Diagnose and repair manual transmission systems, drivelines and differentials. | | AUT 1142 | Assess in FY 12-13 | ASE End of Program Exam | 2012 Averages - 66%  2011 Averages - 64%  2010 Averages - 55% |
| Diagnose automotive electrical and accessory system problems. Utilize DVOM meters, scopes and other electrical testing equipment to troubleshoot battery, charging and hybrid propulsion systems. | | AUT 1114  AUT 2214 | Assessed in FY 10-11 | ASE End of Program Exam |  |
| Diagnose/repair brake, anti-lock and power booster systems. Diagnose/repair suspension and steering components. Perform vehicle alignments. | | AUT 1165  AUT 1116 | Assessed in FY 11-12 | ASE End of Program Exam |  |
| Diagnose and repair heating and air conditioning systems including automatic climate-control systems. | | AUT 1146 | Assessed in FY 11-12 | ASE End of Program ExamASE End of Program Exam |  |
| Apply effective customer communication skills in an automotive service environment. Apply good management skills in operating an automotive service business. Develop and analyze an automotive business facility layout. Demonstrate business computer skills. | | AUT 1111  COM 2206  ENG 1101  AUT 1170  AUT 1171  AUT 1172  AUT 1173 | Assess in FY 12-13 | Success rates,  Angel assessment tool. | 2012 Averages - 85%  2011 Averages - 85.%  2010 Averages - 84% |
| Demonstrate analytical and logical thinking skills in diagnosing mechanical and practical problem scenarios. | | MAT 1110  PHY 1106  All AUT Classes  AUT 1170  AUT 1171  AUT 1172  AUT 1173 | Assess in FY 13-14 |  |  |
| Utilize safety and environmental skills in applying automotive service practices. | | All AUT classes | Assess in FY 13-14 |  |  |
| Demonstrate knowledge of social and human skill sets in supporting community, work and/or the college experience. | | OTM (Art/Hum)  AUT 1170  AUT 1171  AUT 1172  AUT 1173  SOC 1101  AUT 2250 | Assess in FY 13-14 |  |  |

**General Education Outcomes**

1. Are changes planned as a result of the assessment of general education outcomes? If so, what are those changes?

It is our goal to use the department's developed Angel assessment tool to measure the six general education outcomes.

Student assignments will be recorded in the database and the accumulation will give an overall program outcome assessment. We have some data presently in the system for the AUT 215 (2250) capstone course and the AUT 2230 hybrid technology course. As we build the database it will give us an overview of the trends in each of the general education areas. We will build this data using all automotive courses, eventually.

Data from our capstone courses, AUT 215 (2250) and our AUT 2230 hybrid courses during the fall, spring and summer quarters 2012 showed a percentage overall departmental average of 73% for “Oral Communication” and 82% for “written communication program outcomes.

Based on those figures, I would consider those scores average to above average. I see definite room for improvement. More emphasis on grading student’s grammar and sentence structure would help students build a better communication skill set.

1. How will you determine whether those changes had an impact?

We will continue to monitor the Angel assessment database and make changes, accordingly. If numbers go up when changes are made; that could be an indication of improvements.

**Program Outcomes**

1. Are changes planned as a result of the assessment of program outcomes? If so, what are those changes?

The AUT 1142 “Manual Transmissions and Driveline” course average “success rate of 60%” continues to be lower than the departmental overall departments success rate of 87% for 2012. The ASE test score averages also back up this lower rating. Changes were made to the curriculum, under semesters; the department increased the overall time for the course. It is our hope that more time in the class will help improve student learning. I have looked at instructor’s “success rates” for those that teach these classes. It is virtually unchanged from last year. We may need to look into that area as well.

1. How will you determine whether those changes had an impact?

We will be able to determine results from the ASE (End of Program) test, the Angel assessment data and the course success rates. We will be looking for improvements in these results and determining what changes need to be made.

**Improvement Efforts**

1. What were the results of changes that were planned in the last Annual Update? Are further changes needed based on these results?

Last year a discussion of success rates for the AUT 165 “Brake Systems” courses were below the average of the department overall. Changes in the curriculum were implemented along with instructor performance analysis. As a result of those changes; a “success rate” in fall, 2010 of 72% increased to 76% for fall 2011. We also saw continual improvement for the winter quarter 2012. We saw a winter 2011 score of 73% increase to 80% for 2012.

1. Are there any other improvement efforts that have not been discussed in this Annual Update submission?

The department, overall, has exhibited strong success rates and high graduation numbers. The students are finding jobs and the automotive service community is very supportive and happy with Sinclair’s performance.

The department has begun the process of accumulating data through our developed Angel assessment tool and it is our intention to have a strong database that will more precisely analyze program and general education outcomes. From our knowledge, this tool is unique across the college.

One other item that we would like to see happen is for the college to provide advertising and marketing support for the automotive program. This support would allow us to be competitive with the many private institutions that offer automotive programs.

**APPENDIX – PROGRAM COMPLETION AND SUCCESS RATE DATA**

**Degree and Certificate Completion**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Department | Department Name | Program | FY 07-08 | FY 08-09 | FY 09-10 | FY 10-11 |
| 0568 | Automotive Tech | AHPC.STC | 10 | 6 | . | 8 |
| 0568 | Automotive Tech | ASEP.AAS | 18 | 17 | 19 | 11 |
| 0568 | Automotive Tech | AUT.AAS | 27 | 18 | 20 | 29 |
| 0568 | Automotive Tech | AUT.CRT | 103 | 60 | 64 | 60 |
| 0568 | Automotive Tech | AUTHA.AAS | 5 | 3 | 6 | 5 |
| 0568 | Automotive Tech | AUTHO.CRT | . | . | 7 | 10 |
| 0568 | Automotive Tech | CAP.AAS | 14 | 11 | 5 | 4 |
| 0568 | Automotive Tech | FMLR.STC | 7 | 1 | . | 11 |

**Course Success Rates**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Department | Department Name | Course | FY 07-08 | FY 08-09 | FY 09-10 | FY 10-11 | FY 11-12 (excludes Spring) |
| 568 | Automotive Tech | AUT-100 | 78.9% | 71.4% | 83.3% | 77.6% | 82.9% |
| 568 | Automotive Tech | AUT-102 | 96.6% | 78.6% | 82.7% | 78.8% | 80.2% |
| 568 | Automotive Tech | AUT-108 | 84.2% | 81.3% | 77.3% | 72.3% | 81.9% |
| 568 | Automotive Tech | AUT-111 | 96.6% | 84.8% | 85.8% | 85.5% | 91.1% |
| 568 | Automotive Tech | AUT-115 | 76.7% | 74.6% | 75.8% | 77.6% | 76.7% |
| 568 | Automotive Tech | AUT-124 | 69.4% | 65.4% | 65.2% | 72.0% | 65.6% |
| 568 | Automotive Tech | AUT-125 | 62.4% | 74.7% | 76.9% | 79.6% | 81.9% |
| 568 | Automotive Tech | AUT-142 | 71.5% | 68.9% | 77.8% | 75.0% | 70.0% |
| 568 | Automotive Tech | AUT-146 | 86.9% | 73.6% | 85.0% | 82.9% | 90.0% |
| 568 | Automotive Tech | AUT-165 | 73.3% | 59.7% | 72.4% | 72.9% | 78.9% |
| 568 | Automotive Tech | AUT-210 | 77.6% | 83.8% | 86.3% | 81.9% | 77.6% |
| 568 | Automotive Tech | AUT-215 | 92.0% | 90.0% | 100.0% | 100.0% | . |
| 568 | Automotive Tech | AUT-221 | 100.0% | 100.0% | 100.0% | 75.0% | 93.8% |
| 568 | Automotive Tech | AUT-222 | 80.0% | 100.0% | 93.3% | 85.7% | 92.3% |
| 568 | Automotive Tech | AUT-223 | 64.3% | 100.0% | 91.7% | 100.0% | . |
| 568 | Automotive Tech | AUT-224 | 100.0% | 100.0% | . | 80.0% | 84.6% |
| 568 | Automotive Tech | AUT-226 | 77.8% | 100.0% | 92.9% | 90.9% | 100.0% |
| 568 | Automotive Tech | AUT-230 | . | . | . | . | 64.3% |
| 568 | Automotive Tech | AUT-241 | 75.3% | 93.7% | 92.5% | 83.9% | 94.7% |
| 568 | Automotive Tech | AUT-245 | 82.5% | 92.4% | 93.2% | 82.7% | 87.1% |
| 568 | Automotive Tech | AUT-270 | 91.9% | 89.0% | 90.0% | 92.0% | 92.6% |
| 568 | Automotive Tech | AUT-271 | . | . | . | . | 80.8% |
| 568 | Automotive Tech | AUT-272 | . | . | . | . | 75.0% |
| 568 | Automotive Tech | AUT-273 | . | . | . | . | 100.0% |
| 568 | Automotive Tech | AUT-297 | 100.0% | 99.3% | 100.0% | 99.6% | 100.0% |
| 568 | Automotive Tech | AUT-M04 | . | . | . | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M06 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M09 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M18 | 100.0% | 100.0% | . | . | . |
| 568 | Automotive Tech | AUT-M23 | . | . | . | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M25 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M33 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M36 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M37 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M44 | 100.0% | 100.0% | 100.0% | . | 100.0% |
| 568 | Automotive Tech | AUT-M45 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M48 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M59 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 568 | Automotive Tech | AUT-M60 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |