ECC Automotive Technology Program Review 2008-2009
Submitted by Hiram Hironaka

I Overview

A. Description of Program

The mission of the Automotive Technology (ATEC) department is to train future automotive technology students for job entry positions and provide upgrade training for experienced technicians.

Most graduates start at job entry levels at independent and dealership shops. Other students continue their education at 4 year institutions and usually gain employment with auto manufacturers. Eventually, some graduates start their own auto business. These include but are not limited to repair shops, consulting, specialized areas such as vehicle inspection and evaluation.

Women have been trained by this program and have secured employment with Saturn, Toyota, and Honda as service writers, technicians, clay modelers, and upper management.

Although the majority of students intend to earn a certificate or degree, many gain employment after enrolling in only one or two classes and are therefore not tracked nor identified as program completers.
ECC tracking of students is almost none existent and ineffective, once students leave the school. Students move, change phone numbers and do not up-date their information to the school. Some students will occasionally keep in verbal contact, but most do not.

The program offers A.S degrees and certificates. The department has submitted school catalog updates and revisions and has reviewed these for inclusion in the development of the Career Technical Education Handbook, a recent project. The returning faculty in spring 2009 reviewed for accuracy and finalization by matching the information of both the catalog and the CTE Handbook. The information includes new certificates and course sequences, which students may follow. Both catalog and CTE Handbook work are completed and only requires final perusal for publication accuracy.

Training also prepares students to pass the Automotive Service Excellence (ASE), a national automotive technician certification, recognized by the automotive industry and gives credibility to our trained students.

This program enrollment fluctuates inversely to the national, state and local economic health. Historically, as the economy flourishes, enrollment is down, and when there is a scarcity of employment, the enrollment increases. This spring 2009 enrollment is a classic example of this historical trend. Enrollment in this department has wait listed students, a trend not seen for years.

Because the unemployment rate continues to increase, ECC will be impacted with students. In addition, the UC and CSU systems are reducing the incoming freshmen classes due to budget cuts and this move will further increase enrollment at ECC. These students, denied entry into the CSU and UC, will naturally seek freshmen status at ECC and other community colleges.

I. Content Knowledge

Students learn the principles of operation, construction, and testing procedures of various systems and components to enhance their trouble shooting skills and knowledge.

II. Critical, Creative, and Analytical Thinking

This training category has been an integral and natural part of ATEC. Students approach every repair job:

1. using system knowledge or component operational principles
2. test components and collect data
3. analyze the collected data
4. design a repair strategy
5. implement the repair plan
6. validate the effectiveness of the repair

Automotive repair requires critical, creative, and analytical thinking.

III. Communication and Comprehension

ATEC students learn the nuances of dealing with the public who may lack auto knowledge.

The student must be able to communicate effectively in order to promote understanding and comprehension by the customer. This communication skill requires practice and time to perfect. In addition, students learn to deal with public preconceptions that many repair shops and technicians are dishonest.

The technicians must fill out work orders, indicating the required repair. It includes but is not limited to describing and verifying the complaint, recording the analysis of the collected data, conclusion, and confirmation of the completed successful repair.

IV. Professional Growth and Personal Growth

ATEC students are schooled in ethical repair practices and are taught the state laws and regulations of auto repair.

Faculty serves as professional models by maintaining membership and participation in groups, such as California Automotive Teachers, Automotive Service Council, and Society of Automotive Engineers (SAE), a special organization specifically including instructors and other qualified members. SAE provides an avenue to automotive related information .

ATEC faculty encourages students to take Automotive Service Excellence (ASE) national certification tests. These ASE tests consists of take a written test,

proctored twice a year at local designated sites and is written to indicate knowledge, skills and experience. This national certification must be renewed every 5 years

Community and Collaboration

Student's thinking, values, and behavior have changed in the last decade. They are more aware of world events, enjoy electronic devices, and are computer savvy. And most have established goals but lack the requirements to achieve these goals.

These new "**millennium**" student needs are not addressed by the program or ECC campus but are being helped by aware individual teachers, who develop individualized classroom and lab strategies. This "generation markers" topic is new to many people and more is published on this topic.

In general, since WWII, each generation has produced a group with certain distinctive traits and labels such as "veterans", "silent generation", "baby boomers", "generation X", and "**millennium**" and the latest is the "homeland" group.

A positive, significant "millennium" trait is they enjoy each other, regardless of ethnicity and socioeconomic orientation. They work very well in groups and benefit from their gregarious tendencies. This trait is an opportunity for teachers to promote student success and retention.

Based on this trait, some teachers form teams consisting of 3-4 students to capitalize on their gregarious interaction, caring for each other and helping each other. Other teaching methods include awarding highest team quiz scores, thereby promoting camaraderie through group studying and learning the effectiveness of dedication to goals. There are other simple effective teaching methods implemented.

B. Status of Previous Recommendation

The ATEC department did not submit a program review since 1996 when the National Automotive Technician Education Foundation (NATEF) certification was accepted in lieu of a program review. And after this cycle, there was no PR designee to submit a timely report.

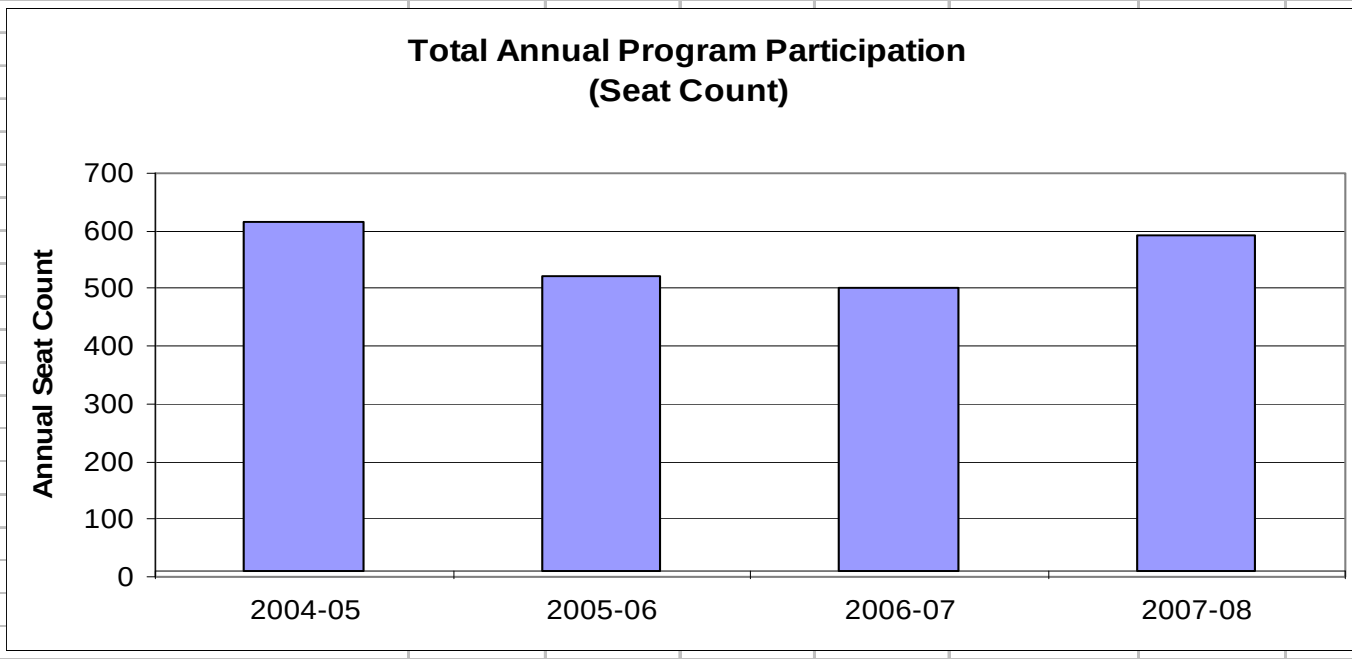
There is a huge disconnect on the ECC campus because there are no department chairs. The dean is deemed to be omniscient, omnipresent, etc. and is expected to manage effectively and efficiently all departments. This organizational structure dates back to the inception and initial founding of ECC in the late 1940s and this archaic paradigm will continue in order to keep operational cost down, especially during this world wide economic recession. However, the I&T Dean and Associate Dean can not possibly handle effectively and efficiently all responsibilities. At the very least, it is prudent to establish several I&T division group leaders responsible for several departments and be given release time.

The present National Automotive Technician Education Foundation (NATEF) certification has expired and requires renewal. Work is in progress to accomplish this with an anticipated certification visit in late 2009.

II Analysis of Institutional Research Data

Total Annual Program Participation (4-year Trend)
Years: 2004-05 to 2007-08
Program: ATEC

	2004-05	2005-06	2006-07	2007-08	4 Yr Average
Annual Seat Count	615	523	503	593	559

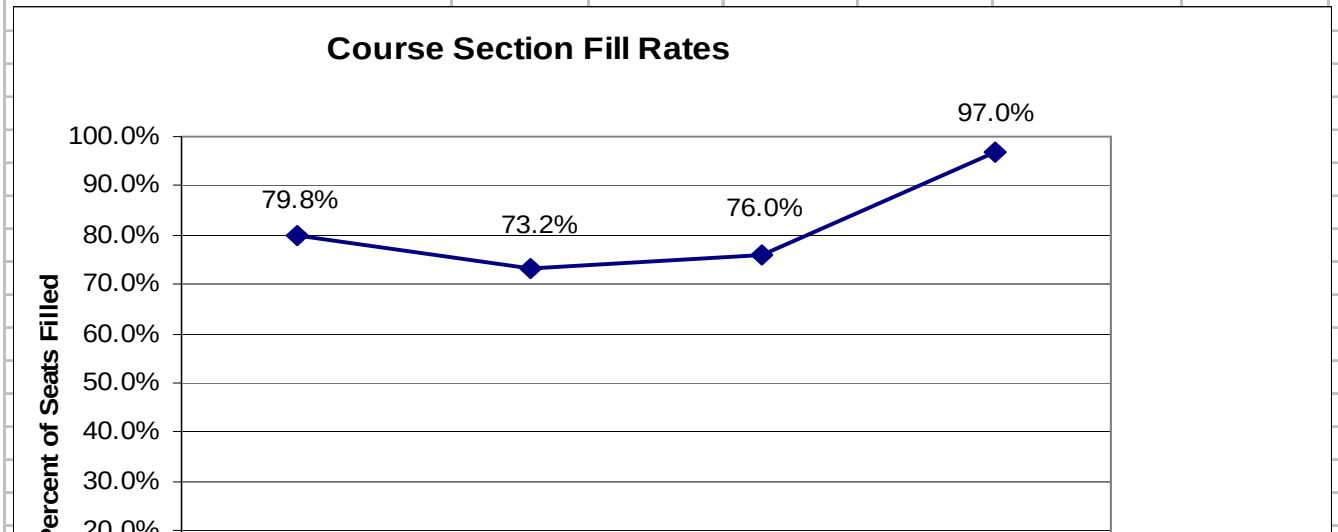


Course, Section, Seat Counts
Years: 2004-05 to 2007-08

	2004-05	2005-06	2006-07	2007-08
Sections	30	30	30	29
Seats	615	523	503	593
Unduplicated Students	570	578	532	533
Seats/Unduplicated Students	1.1	0.9	0.9	1.1

Course Fill Rates

	Fall 05	Fall 06	Fall 07	Fall 08
	79.8%	73.2%	76.0%	97.0%



The following data retrieved received from I&T division

Weekly census data from spring 2006 through spring 2008 indicated the following:

Semester and Year	% Max Seats	FTES
Spring 2006	81.1	62.55
Fall 2006	82.9	63.39
Spring 2007	79.6	53.22
Fall 2007	80.4	59.96
Spring 2008	94.4	66.95
Fall 2008	93.5	61.79
Spring 2009	TBA	TBA

Data observations indicate the growth during the 2007-2008. Further growth occurred during 2008-2009 period, which was characterized by waiting lists.

III Curriculum: Course, Content, and Articulation

All ATEC courses except ATEC 81 Automotive Air Conditioning require updating to be in compliance. These courses are in the process of being revised and completion is anticipated by the end of spring 2009.

Student survey indicates an interest in hybrids, air brakes and marine. These courses will enhance student knowledge base and provide more opportunities for employment as well as provide industry with better trained entry level technicians.

No courses should be deleted from the current course offerings.

Articulation agreement of ATEC 1, an intro course requires review for currency with Southern California Regional Occupational Center

IV Student Learning Outcomes (SLOs)

Program SLOs has been completed spring 2009 during flex activities and have been forwarded digitally. All courses have been completed at level one, evidenced by the inclusion of required safety instruction and student testing.

V Facilities and Equipment

The ATEC department facilities must be improved. Financial cost to achieve our recommendations is estimated to be $2,750,000.

1. Illumination has been poor and not rectified for decades, even if requests have been submitted. Changing lights in the machine shop had to be performed by faculty. An evening machine class had to use flashlights for a valve grinding demonstration, but this has been corrected. Recent lumens testing by faculty indicate the lab is significantly below minimum state standards of 500 lumens. The faculty office requires improved lighting. Only one out of three class rooms meet the minimum state lumens requirement of 250. The facilities have the

potential for litigation if anyone becomes injured and if it is attributable to poor lighting.

2. Air hose reels have been defective in operation since the shop was remodeled in the 1980s. Two vehicle hoists were installed incorrectly. Apparently, there was no effective oversight and the job was signed-off. Faculty did not have a"walk through final inspection" as in when one purchases a house. Apparently, an outside inspector was hired by the college but failed to do his job, resulting in 2 sub-performing hoists, albeit they are safe. Therefore, the department is expending its own funding instead of the college proving normal funding to rectify the air hose and drop light reels. In addition, many of the underground hoists will eventually require replacement due to age and the corrosive natural of the soil. Furthermore, car hoists mounted above ground are needed as well as replacement of the exhaust gas extraction system.
3. Facilities improvement, expansion and basic repairs require immediate attention but no action is anticipated, since they have not been responsibly addressed for decades. Example: the request to check light illumination adequacy has been ignored but was completed only because faculty took action. The leaking roof was "repaired" and leaks worse, resulting in mildew in the sagging ceiling in room 402. Further repair will be requested since this sagging ceiling is now bulging and appear unsafe. This health and safety issue requires attention.
4. Work benches and bench vices need replacement after 30 years.
5. Classroom should be upgraded with permanently installed with video projectors and sound.
6. The department has a contract with the State of California to provide room for a smog referee station. The rent is placed into a department account for department use to supplement funds provided by the school. This welcomed additional money has helped the department purchase needed additional supplies. However, there was an occasion when the monies disappeared when the faculty returned in the fall and no one could tell us what happened to the $7000 or so. The disappearance occurred when the Fire Science department apparently over spent their budget. This lack of honesty and transparency promoted cuckold feelings and has frustrated the department.

VI Staffing

Current staffing consists of 4 FT and 1 PT and appears to meet the present needs only for the present semester. Enrollment data indicates increased enrollment may necessitate restoring the second PT position for the teaching of the intro class which was cancelled. Canceling beginning classes will save money for the short term but will tend to decrease enrollment in the future for the advance classes. It is noted that the cancelled intro class has not been reinstated for fall 2009.

There has been an emphasis on "Green Technology" and a recent submission of a grant for Hybrid and Electric Car program implementation. Therefore, natural program expansion is anticipated within the next five years.

Three of the four FT instructors will probably retire within the next 5 years and will affect staffing. The challenge is to identify and hire capable, qualified, student

oriented instructors. The present dilemma is most technicians working in the field do not meet the qualifications for tenure even if they are hired.

VII Planning

The next four years of planning will be significant for this department and program goals because of the recession, which affects budgets, funding, and enrollment and provides opportunities.

1. Required facility maintenance will be limited.
   Basic facility repairs are coming from department funds rather from the institution.
2. New equipment procurement will be delayed because the division has been informed that there is a lack of funding.
   Request for equipment will be submitted without expecting approval because of budgetary reduction.
3. Enrollment is on the rise since many students report losing their jobs and seek training.
4. Closures by Chrysler and GM will affect available dealership jobs and the repair industry. It is predictable that less new cars would be sold and more old cars will be repaired, resulting in increase sales in the after market parts field.
5. Stimulus incentives offer some funding opportunities. The recent submission of a grant for Hybrid and Electric Cars may bring welcomed funding to the department for facility improvement, equipment enhancement, and program expansion for promoting Green Technology. The grant includes opportunities for building strong partnerships and articulation agreements among the high schools, ECC, the 4 year institutions and supported by industry. It is an exciting time to rebuild programs and form linkages.

The automotive industry is a continuing evolution of new technologies. Every year there are more cars featuring new electronic equipment such as built in GPS and radar assisted parking and braking, and the list continues to grow annually.

1. Manufacturers produce more hi-tech equipment at a rapid rate, requiring new test equipment and knowledge. This requires the ATEC program to keep abreast with the equipment/knowledge requirements in order to provide updated training as part of the departmental mission statement.
2. Location of components differ among manufacturers and cars and this challenge continues, unlike the medical field, which deals with only two models for the last hundreds of years.
3. Update training is a constant requirement for faculty and increased funds should be provided. Faculty seeks gratis training on their own time and at their own expense and occasionally share transportation costs and request reimbursement from departmental accounts.

The department should consider a name change to reflect the changes in our mission and evolution of transportation technology.

1. It may be renamed Advanced Transportation and Energy to encompass automotive, trucks, hybrids, alternative fuel, marine, and renewable energy fuel vehicles. This name change has not been yet been discussed officially.
2. It should include marine technology, a neglected area of instructional opportunities, especially based on our proximity to the Pacific Ocean. The local marinas are interested in promoting training to their dock tenants for a fee.

In summary, the department has identified in the planning process to 1. Improve the almost 30 year old facility, which includes but is not limited to modernizing the lab and providing "smart classrooms" with built-in overhead video projectors and sound, 2. Develop green technology as evidenced by the recent collaborative submission of a Hybrid and Electric Vehicle grant, 3. Form stronger partnerships with industry and articulate with 4-year institutions, regional occupational centers and high schools, 4. Continue to seek training for faculty, 5. Complete requirements for National Automotive Technicians Education Foundation (NATEF) certifications. These achievable goals will bring the ECC Automotive Technology Department to the forefront of automotive technology education.

VIII Conclusion

At present, the department has lost the Toyota T-Ten partnership and NATEF certification, and has one course identified as green technology. The almost 30 year old facilities require repair and modernization. In addition, it established additional certificates for students who do not complete all the courses but choose to specialize.

The future department goals are to 1. Achieve NATEF certification, 2. Repair and modernize the facilities and procure new tools and equipment to provide a safe and efficient learning environment, 3. Establish more green technology courses such as Alternative Fuels, Hybrids, Electric Cars, 4. Implement air brakes and marine courses, 5. Update the articulation agreement with Southern Regional Occupational Center, and 6. Establish another partnership with an auto manufacturer after gaining NATEF certification, a bench mark indicating progress. This department has voiced its concerns and observations, can respond to the identified challenges and is working towards providing an improved learning environment for students as they gain knowledge and skills.