

CITRUS COLLEGE
Automotive Technology
Program Review 2004-2005

NARRATIVE
May 4, 2005

AUTOMOTIVE TECHNOLOGY PROGRAM REVIEW
COMMITTEE MEMBERS
2004-2005

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Program Description

Automotive Technology continues to offer a challenging career for men and women in the automotive service and aftermarket industry. The need for automotive service technicians with strong technical and diagnostic skills continues at a strong pace. The increased demand for service writers with “soft skills” has led to new curriculum development for this specialty. The growth of the aftermarket industry prompted the development of a new certificate program designed specifically to fill the needs of this growth industry. The Department of Labor growth statistics continues to project that the need for automotive technicians will far exceed the supply for the next ten years. Both the Toyota/Lexus Technical Training Program and the ASC FastTrack Training Program received recertification from NATEF within the last two years.

Toyota/Lexus specialized certificate Program: The current two-year Program includes one year of work site learning experience with students working as service technician apprentices in Toyota/Lexus dealerships. Courses are continually updated and added as needed to keep the Program current with industry standards. A new one semester Program has been added to provide Toyota factory-level training for service technicians with experience from other manufacturers. Students are encouraged to transfer to a four-year institution to continue their education. (i.e. California State University – Los Angeles: Production Technology)

Automotive Service Council FastTrack specialized certificate Program: A specialized independent automotive repair-shop-sponsored 2-year certificate program includes one year of work site learning experience with students working as service technician apprentices in independent repair shops. The ASC (Automotive Service Council) is a California state-wide organization of independent repair facilities. Students are encouraged to transfer to a four-year institution to continue their education. (i.e. California State University – Los Angeles: Production Technology)

High Performance Institute (HPI): A new certificate program that combines advanced-level training in automotive theory and application with business courses designed to prepare students for entry-level work in the aftermarket industry. The Program includes the opportunity to intern at the annual SEMA show in cooperation with SEMA (Specialty Equipment Market Association) by attending training seminars and working with aftermarket companies. Students are encouraged to transfer to a four-year institution to continue their education. (i.e. California State University – Los Angeles: Production Technology)

General Automotive Program: The 2-year certificate program is designed to meet the needs of individuals who want to gain entry level knowledge and skills or upgrade current knowledge and skills.

Extended day Program: Offers various levels of classes designed to meet the needs of entry level technicians and upgrade the knowledge and skills of currently employed technicians.

Special classes and workshops: Several classes, which are required for technicians to keep certifications and licenses current, are offered through community and contract education. This includes specialized training for the Bureau of Automotive Repair Clean Air Smog Technician Program.

Program Objectives

To meet the demands specified in the “Program Description,” curriculum and certificates have been developed to achieve the Program’s major objectives:

- Value high standards of achievement, accepting personal accountability as a life-long success goal.
- Enhance skills in a program that provides opportunities for continuously updating and expanding knowledge and technical skills as technology advances.
- Develop and improve skills and knowledge in a program that offers updated training for beginning as well as advanced technicians.

MISSION:

Commendations:

- Program conforms with the district's mission to provide transfer, associate degree, certificate, and vocational programs leading to placement in the work force.
- A mission statement for Transportation Technology and a vision statement for the Automotive Program have been developed (see attached).

Follow-up to previous recommendations:

- The Program has achieved an increase in the percentage of female students which was a recommendation from the last program review. Previous level of female participation was 4% and current figures show an increase to 9%.
- A long-range plan was established following the last program review, but over the last five years three new faculty members have been employed replacing one who retired and one who found employment elsewhere, which has brought a new focus to the Automotive Programs and the need for a new long-range plan.
- Faculty have consistently put certificate Programs through a review process to clarify requirements and produce viable certificate information sheets.
- The Program traditionally holds two advisory meetings per year, one in the fall and one in the spring. The fall meeting is designated as the Toyota/Lexus business plan meeting to discuss that particular Program and its needs. The spring meeting focuses on the entire Program.
- The Program now has one faculty member designated as the Recruitment and Marketing Coordinator. This faculty member works closely with the recruitment efforts of Citrus College and other vocational marketing efforts.

Recommendations

- The Program needs to strive for diversity in the faculty whenever the opportunity to hire new faculty arises.
- Develop a more comprehensive training program that uses a root series of classes that lead to distinct branch specialties.
- Add a cooperative training element to the Program that provides in-class training in labor laws and rights and provides guidance and oversight for students at the job site.
- Develop a new long-range plan that reflects the input of the new faculty dynamic and the expected addition of new vocational buildings.

NEED:

Information gathered from testimony before the Joint Legislative Sunset Review Committee Hearing on the Bureau of Automotive Repair – January 6, 2004.

1. Currently, 69% of automotive service providers cite finding skilled technicians as their top challenge.
2. The California Employment Development Department (EDD) lists “Automotive Service Technicians & Mechanics” as one of the occupations with the fastest growth in our state between 2000 and 2010 at 25.6%.
3. In raw numbers, the EDD reports there will be 41,800 job openings for automotive technicians in this state before 2010.
4. Industry statistics show that for every 10 technicians who retire or leave the field, only two or three people join as new technicians.
5. Exacerbating the replacement challenge is the fact that the majority of our technician workforce will be entering retirement in the next ten years.

Additional information gathered from the National Toyota Conference, held in Las Vegas in March 2005, as reported by Rick Lester, Toyota Motor Sales:

Proposed growth, based on projected demand, for T-TEN completers from the current 565 will be 1000 by the year 2010. This would require each school to produce a proportional increase in output.

Commendations:

- The Program’s industry advisory committee reviews curriculum, schedule of class offerings, and certificate requirements in an effort to stay current with industry and labor market needs.
- A new Automotive Service Consulting/Management certificate Program is being planned that will include coursework in service consulting and management for dealership and independent repair facilities.
- Since the last Program review, the following courses and certificates have been added based on advisory council recommendations:

High Performance Institute Certificate

- 260 – Engine Design
- 261 – Cylinder Head Development
- 262 – Cylinder Block Development
- 290 – Introduction to the Automotive Aftermarket
- 291 – Engine Performance Enhancements
- 292 – Advanced Drivetrain Development
- 293 – Advanced Steering and Suspension Geometry
- 294 – Brake Design and Analysis
- 295 – Special Projects

Courses added for the Proposed Automotive Service Consultant/Management Certificate

- 145 – Automotive Service Consulting
- 245 – Automotive Service Management

Courses added for contract/community education

- 2003 Smog Update course
- 2005 Smog Update course
- Basic Clean Air Car Course
- Advanced Clean Air Car Course
- Advanced Toyota Certified Technician Training

- Since the last program review, the following courses have been updated by adjusting hours and/or course content based on advisory committee recommendations:
 - 202 – Manual Drivetrain
 - 213 – Toyota Drivetrain I
 - 214 – Toyota Drivetrain II
- Two newsletters have been produced to market the Programs. The “Ten-Tenths” newsletter (published four times per year) is designed to reach the automotive aftermarket industry and “Quadrivial News” newsletter (published twice per year) is designed to reach anyone interested in the Automotive Programs at Citrus.
- The faculty have worked with the Coordinator of Vocational Programs to develop a web card for distribution to potential students.
- The Program uses “Transportation Exploring Days” as a means either have high school student visit the Citrus College campus or for the Program recruitment and marketing coordinator to visit the high school.
- Instructors completed the writing of the FastTrack Guidebook as part of a \$100,000 Leadership grant the Program received to develop the new Program. This guidebook was shared with the statewide ASC organization and offered to any schools that showed an interest in developing their own program.
- Students completing the Programs will find employment in the automotive service field.
- The Program continually strives to add additional courses and certificate Programs as needed based on input from regular advisory council meetings.
- The faculty regularly takes part in recruitment activities at high schools throughout the region. This includes job fairs and scheduled visits to high school or ROP automotive classrooms.
- A service advisor software package has been purchased to compliment the proposed Service Advisor/Management certificate Program.

Follow-up on previous recommendations:

- To continue efforts in encouraging students to apply for their earned certificates, the Program has improved the access and accessibility for certificate information in the main Automotive hallway.
- To continue efforts in encouraging students to complete their associate degree with a major in Automotive Technology the faculty have developed “Option” sheets that show students their certificate, degree, or transfer options and requirements. Also, orientation meetings have been developed for incoming students to establish requirements for specific student goals.
- The Program has acquired the use of a computer lab with 24 stations providing access to automotive manufacturers and aftermarket service manual publishers. Also included in the software are ASE (Automotive Service Excellence) self-study guides for student certification preparation and Engine Design software for use in the Engine Design class.
- Currently the Citrus College Master Plan includes the scheduled replacement of Tech A, D, and E. The schedule lists a completion date of January 2009.

Recommendations:

- Establish an industry involved committee to develop final plans for new building construction to meet the future needs of the industry.
- The current Automotive buildings (Tech A, D, and E) have been designated for tear-down and replacement. New buildings will allow the individual Automotive classes to consolidate the lab experience into a more centralized location for improved supervision by faculty. Individual labs will ease scheduling and provide for growth of the program as the student population grows at Citrus College. The Automotive faculty need to be intimately involved in the planning for of the new buildings. This will ensure the most efficient use of allowable square footage while meeting the goals of the Education and Facilities Master Plans. The faculty needs to continue their discussions with the Building Project Coordinator regarding construction schedules and transition space utilization.
- Develop a plan for program continuance during proposed construction.
- The Automotive Program currently has the assistance of a part-time student assistant who handles secretarial work for the Program. With the current and expected workload is recommended that the Automotive Program find a means to fund a full-time office assistant.
- Develop an assessment process in coordination with the Counseling Department to provide advisement to students in an effort to increase student retention and success.
- Develop a plan for increased output of T-TEN completers to meet the demand as established by Toyota Motor Sales.
- When the new vocational buildings are completed, the Automotive Program would benefit from a lab assistant who is capable of performing preventive maintenance and tracking and maintaining upgrades to test equipment.

QUALITY:

Commendations:

- Programs continue to be NATEF (National Automotive Technicians Education Foundation) certified with recertification completed in 2002 and expiring in 2007.
- Curriculum includes writing skills and job preparation techniques to address the SCANS (Secretary's Commission on Achieving Necessary Skills) competencies.
- Instructors participate in professional development on a regular basis and maintain current ASE Master Technician certification in Automotive technology.
- Instructors attend technical update classes/seminars on a regular basis to keep abreast of current and future technology.
- Computers and computer interface hardware and software are a part of the Program.
- Social skills are stressed with the use of teamwork and team building activities.
- The Program participates in a partnership with Toyota and Lexus in a manufacturer sponsored 2-year technician training program.
- The Program participates in a partnership with local ASC (Automotive Service Council) chapters in a sponsored 2-year technician training program.
- Program continues to interface with Toyota/Lexus dealerships and independent repair shops to place students in worksite learning experience positions. Each Program has a program coordinator to interface with relevant repair facilities and assist students in attaining employment.
- Qualified adjunct faculty from industry continue to bring additional professional expertise into the classroom and department.
- All instructors teaching BAR mandated classes are certified as BAR Advanced Level Instructors and continue to attend update courses as offered by the state.
- Faculty are actively involved in determining how the available funds are directed for updated equipment and replacement.
- Faculty developed a program guide that was distributed statewide through the Automotive Service Council organization.
- The Program offers courses in a sequence that achieves student goals within a one to four semester time span (including one summer).
- The Program offers NATEF certified courses required for initial application for and renewal of licenses and certifications
- The faculty regularly take part in recruitment activities at high schools throughout the region. This includes job fairs and scheduled visits to high school or ROP automotive classrooms.
- The Automotive Programs currently have a number of articulation agreements with local high schools and have recently added Chaffey High School, Ontario

High School, and Claremont High School. Discussions are taking place to add Palmdale High School.

- VTEA-funded expenditures from 1997-2004 totalled \$387,555, enabling the purchase of equipment, tools, and services that would otherwise have gone unfunded or would have been picked up through the district's instructional budget.
- Core Indicators show that over 90% of the Automotive students are employed after leaving the Citrus College Program.
- A new VTEA proposal titled the Certificate Completion Initiative includes the creation and implementation of a data management system that will allow for communication with, and tracking of, students entering and exiting the Program.

Recommendations:

- Develop a timeline for rewriting all course outlines to include Student Learning Outcomes.
- Develop appropriate compensation for individual program coordination or provide reassign time for one individual to coordinate all the Automotive Programs. There are currently individual coordinators for the T-TEN, ASC FastTrack, and HPI Programs.
- Insure that planning of new facilities provides for student supervision by an instructor at all times. Space limitations currently place students in more than one location while in a lab setting. This means an instructor has to move from one location to another and leaves students unattended for short periods of time.
- Reassess certificate and skill award requirements to make certain that the standards are reasonable, feasible, and able to be accomplished by students.
- Review the process for certificate and skill award application to encourage more eligible students to complete.
- Explore the possibility of an annual meeting with colleagues from other colleges in order to share information with other Automotive faculty and discuss regional issues.
- Revise syllabi to reflect the writing components currently required in each class.
- Explore the possibility of tracking pass rates for students' ASE certifications.

FEASIBILITY:

Commendations:

- Program has the use of a computer lab for instructional purposes. Software includes: AllData repair information, ASE study guides, and engine design.
- All four classrooms are equipped with interactive white boards or Smart Boards and instructor presentations make extensive use of PowerPoint.

- Program continues to update equipment and tools to reflect the changing industry within the budget limitations.
- The average class size in 2003-04 is nearly at 1997-98 levels (25.25), after dipping below 20 in 2000-01 and 2001-02.
- Availability of adjunct faculty is sufficient for current course levels.
- The Program encourages completers to pursue further education and return as adjuncts.

Recommendations:

- Program needs up-to-date computers in each lab, connected to the network, with access to the software in the computer lab.
- Classrooms need to be equipped with built-in audio-visual equipment/computers to eliminate the set-up/tear-down time for each class. This also eases the use of technology by adjunct faculty members.
- Equipment purchases need a budget that would allow prioritizing the purchase of larger pieces of equipment (i.e. those items that cost in excess of \$20,000).
- Program needs to purchase software for the proposed Service Consultant/Management program.
- Credit revenue (FTES X annual reimbursement rate) comparison to Program costs has decreased from 137% in 1997-98 to 100% in 2003-04, indicating that the Program is just “breaking even” prior to indirect costs of facilities and maintenance, business and administration, student services, etc. The change in ratio is due, in part, to higher full-time faculty costs, fewer adjunct with temporary program reduction, and equipment purchases to keep the program current with industry standards. Cost benefit analysis should be monitored as we serve the community.
- Cost per FTES (Program Costs ÷ FTES) has increased from \$1857 in 1997-98 to \$2791 in 2003-04, bringing the ratio with credit reimbursement rate (credit reimbursement rate ÷ cost per FTES) down from 137% in 1997-98 to 100% in 2003-04. The change in ratio is due, in part, to higher full-time faculty costs, fewer adjunct with temporary program reduction, and equipment purchases to keep the program current with industry standards. Cost benefit analysis should be monitored as we serve the community.

COMPLIANCE:

Commendations:

- All instructors use syllabi that explain course regulations and safety.
- The Automotive and Toyota/Lexus Programs have recently completed recertification and both are currently NATEF certified.
- The Automotive Program is currently certified as a Bureau of Automotive Repair training facility.
- The Automotive Program conducts an advisory meeting in the fall to review the Toyota/Lexus business plan and another advisory meeting in the spring to review all curriculum and certificates.

- The Automotive Program continues to articulate with area high schools.
- The Automotive Program continues its strong ties with the CSU system, especially CSULA for students wishing to transfer and continue their education in Production Technology or Engineering.

Recommendations:

- Develop plan for all adjunct faculty to complete all their ASE certifications.
- Write program approval packet for Service/Consultant/Management option.

The Mission of the Citrus College Transportation Technology Department

The mission of the Transportation Technology Department is to provide innovative educational opportunities that promote life-long learning thereby assisting each student in the attainment of their education and career goals; demonstrate academic rigor in the advancement of each learner within their chosen occupation; instill within the student a personal/professional commitment to uphold the high standards and uplift the integrity of the transportation industry; and continually integrate current and future industry standards within the curriculum. The cultivation of the learner's interest in life-long learning, individual excellence and continued advancement will be indicators of success.

Vision Statement for the Automotive Technology Programs

It is the vision of the Citrus College Automotive Technology Programs that each and every student will find their place in the world. Should that place lie within the automotive domain, the Citrus College Automotive Technology Programs can play a significant role in the students' personal development and training in becoming a vital part of the whole.

CITRUS COLLEGE
Automotive Technology Program
Key Performance Indicators
March 2005

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Program Access							
Sections Offered	40	40	49	50	47	44	32
Registration	1010	1030	1005	998	925	1057	805
FTEs	185.99	185.28	182.91	190.47	173.41	213.16	178.17
Program Resources							
Credit Reimb Rate	\$2551	\$2540	\$2584	\$2689	\$2794	\$2850	\$2790
Credit Revenue (FTEs X Reimb)	\$474,461	\$470,611	\$472,639	\$512,174	\$484,508	\$607,506	\$497,094
Full-Time Equiv Faculty	5.02	5.17	6.18	6.16	5.64	5.94	4.87
Personnel Budget	\$296,285	\$320,148	\$395,160	\$347,164	\$386,756	\$425,895	\$417,564
Supply Budget	11,100	11,573	20,000	20,000	20,000	17,400	16,645
Equipment Budget	1,000	0	0	0	0	2,600	3,100
VTEA Funding	36,970	30,626	36,400	72,985	84,925	65,642	60,004
Program Costs	\$345,355	362,347	\$451,560	\$440,149	\$491,681	\$511,537	\$497,313
Program Efficiency							
Average Class Size	25.25	25.75	20.51	19.96	19.68	24.02	25.16
FTEs per FTEF	37.05	35.84	29.60	30.92	30.75	35.89	36.59
Productivity (WSCH ÷ FTEF)	1111.49	1075.13	887.91	927.61	922.39	1076.57	1097.56
Cost per FTES (Cost ÷ FTES)	\$1857	\$1956	\$2469	\$2311	\$2835	\$2400	\$2791
Program Success							
Retention – D or Better	833	864	838	816	740	836	592
Success - C or Better	788	821	805	766	702	770	531
Certificates Awarded	76	63	28	2	21	1	1
Skill Awards	226	262	388	212	307	161	2