AUTOMOTIVE SERVICING
Needs Assessment

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Office of Institutional Planning and Analysis
Oakland Community College

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EXECUTIVE SUMMARY

- This needs assessment was undertaken in order to evaluate industrial needs and appropriate educational responses for OCC's Automobile Servicing program.

- Information for the assessment was obtained from a survey of employers and businesses in the field, a survey of students enrolled in existing courses, a literature search, data from state and federal government sources, information from professional organizations, minutes from OCC Automotive Servicing Advisory Committee meetings, and a study of programs offered by other higher educational institutions.

- OCC's Automotive Servicing program offers courses designed to assist students in passing the State of Michigan Examinations in all eight specialized areas. Some students are working on skills needed for entry level employment, while others seek to update their skills and knowledge in the field. Consistent with most other community college programs in the State, OCC's program stresses both hands-on and classroom instruction.

- Student credit hours and student headcount for the OCC Automotive Servicing program declined 47.7% between 1983 and 1993; however, enrollments have remained relatively stable since 1986. Two thirds (66.7%) of students surveyed indicated that they are currently employed full-time, and 83.9% of employed students are working in the automotive industry.

- The Automotive Servicing program at OCC has an active Advisory Committee. The Committee recently recommended that the program stress basic automotive skills, computer literacy, and co-op opportunities. Additionally, NATEF Certification, automotive servicing seminars, and career development support for students were encouraged. Faculty and administrators at OCC have indicated concern with program advisement personnel, monitoring of equipment, and funding for upgrades and new equipment.

- Experts in the field indicate a need for automotive technicians to be proficient in the use of computers as essential tools for business management and automotive problem diagnosis. Technicians of the future are predicted to need strong mathematical, writing and computer skills, and to view themselves as "vehicle doctors."

- Nearly one third (29.9%) of employers are currently hiring entry level personnel. Well over half (58.3%) of those hiring indicated expansion as the reason.

- Employers surveyed indicated that they seek employees with strong hands-on abilities and communication skills. Most employers (85%) indicate that they provide their own on-the-job training to employees. Persons with strong mechanical skills and Auto Service Excellence (ASE) certifications are expected find greater employment opportunities than those without; those with strong interpersonal skills and managerial abilities may advance to service advisor or management positions.

- The automotive industry as a whole is having difficulty attracting women to the field. OCC's program enrolls a slightly higher percentage of women (6.8%) than the State average (5.6%).

- Statewide, discussions are being held regarding instituting a re-certification requirement for State certifications. Community colleges and trade schools with updated equipment and instruction may realize an increase in enrollment if re-certifications become required.

- Concerns from students regarding the OCC Automotive Servicing program focus on the quality of instruction, equipment/work area maintenance, and tool availability. Student concerns included the need for updated equipment and faculty who are knowledgeable about new developments.

OAKLAND COMMUNITY COLLEGE
AUTOMOBILE SERVICING
NEEDS ASSESSMENT

INTRODUCTION

The purpose of this report is to review current industry needs and educational responses related to the field of automotive servicing. This report is intended to assist the Oakland Community College Administration in planning for the future of the Automobile Servicing Program at Oakland Community College. The review was initiated by Cheryl Krakow, Dean of Academic Services at Oakland Community College's Auburn Hills Campus and is part of an on-going effort to evaluate the viability of all vocational programs at the College. The report includes a comprehensive literature review, data supplied by the U.S. Department of Labor, Michigan Occupational Information System (MOIS), information compiled from phone conversations with industry experts, and an examination of related programs in other higher education institutions. Phone surveys of employers in the automotive industry and students who have recently enrolled in Automobile Servicing courses at OCC were conducted.

Description of Existing Program

Oakland Community College offers an Automobile Servicing Associate's Degree and a Certificate Program in Automobile Servicing. The OCC Automotive Service Program courses are "competency based" and designed to prepare students to pass the State of Michigan licensing test and ASE certification tests. OCC automotive servicing instruction stresses hands-on laboratory work in addition to traditional classroom instruction. After completing appropriate automotive servicing coursework at OCC and passing the State examination(s), individuals should qualify for entry-level automotive servicing positions. Courses are designed around the eight specialized areas that are included in the State of Michigan Mechanic Certification: engine repair; engine tune-up/performance; front end, suspension, and steering systems; brakes and braking systems; automatic transmission; manual transmission, front and rear drive axles; electrical systems; and heating and air conditioning systems.

Enrollment in and graduation from the Automotive Servicing program has declined in recent years. As indicated in the 1993 Student and Financial Data Book prepared by the Office of Institutional Planning and Analysis (Appendix A), there was a 47.7% decline in student headcount and student credit hours in the Automotive Servicing program between 1983 and 1993. During academic year 1992-93, 475 students (duplicated headcount) enrolled in courses in the Automotive Servicing department at OCC (See Table 1 and Figure 1), a substantial increase over the previous year.

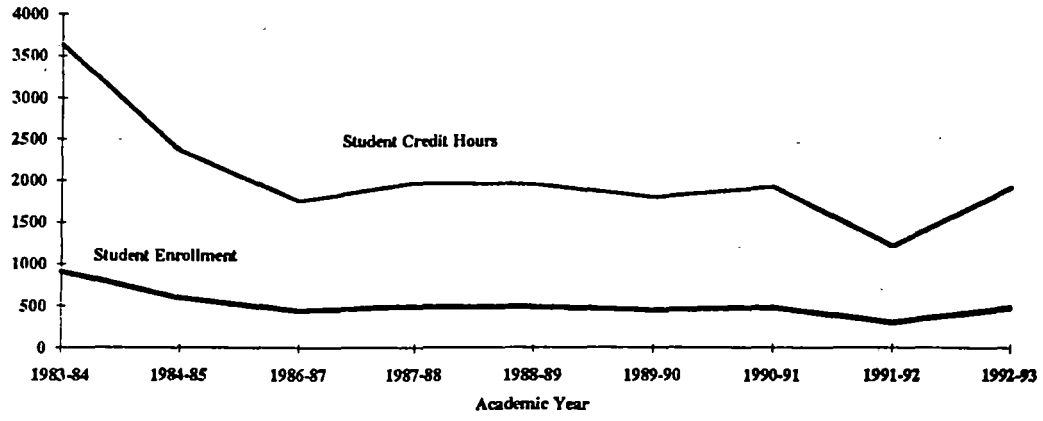
Trends in Annual Student Headcount and Annual Student Credit Hours* in Automotive Servicing
Automotive Servicing

Table 1 and Figure 1 depict the total annual student enrollment and total student credit hours for a ten year period. Data is based on the course's official count date.

Table 1
Academic Year

	1983-84	1984-85	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	Ten Year
Student Headcount	908	589	438	490	486	447	478	302	475	-47.7
Student Credit Hour	3,632.0	2,356.0	1,752.0	1,960.0	1,944.0	1,788.0	1,912.0	1,208.0	1,900.0	-47.7

Figure 1
Automotive Servicing



The Automotive Servicing program is assisted by an Advisory Committee which includes 14 individuals from local businesses, schools and professional organizations as well as 13 members of the faculty and staff at OCC. Minutes from the most recent Advisory Committee Meeting appear in Appendix B.

Several recommendations were advanced by the OCC Automotive Servicing Advisory Committee on January 29, 1993: 1) the program should continue to emphasize basic automotive skills, 2) the program should stress computer literacy, 3) the Job Placement Office will be enlisted to assist in arranging co-op experiences for students, 4) NATEF certification will be explored, and 5) consideration will be given to offering automotive servicing seminars. The Michigan Community Colleges' *Faculty Perceptions of Occupational Education Programs* report reveals concerns from OCC faculty and administrators. Among these concerns are the need for qualified personnel to do program advisement, to continue to closely monitor of equipment, and to identify funding sources for new equipment and upgrades. According to the *Faculty Perceptions* report, the quality of education being provided by OCC's Automotive Servicing Program makes it possible for a student to be trained and certifiable in three or four State Certification areas in as little as 15 weeks.

Description of Occupation

The Michigan Occupational Information Service (MOIS) offers the following description for "automobile mechanic":

> *Automobile mechanics may perform general duties or specialize in a single skill. In small shops, mechanics are usually qualified to do many kinds of repairs. Large shops and those that specialize in a particular kind of repair work might employ specialists. Some might specialize in air conditioning, brakes, carburetor, front end, automatic transmission, engine tune-up, radiator, engine repair, or fuel injection and electrical systems. (MOIS, 1992)*

Although the term "mechanic" continues to be used in some settings, employers and other automotive experts indicate that the term is outdated, is inadequate for describing the technical nature of tasks currently being done by automotive servicing personnel. Many suggest that persons who service cars should be called "technicians," a term that more appropriately places the occupation within the technological realm.

The Center for Educational Statistics defines an "automotive mechanics" educational program as:

> *An instructional program that prepares individuals to engage in the servicing and maintenance of all types of automobiles. Includes instruction in the diagnosis of malfunctions in and repair of engines; fuel, electrical, cooling and brake systems; and drive train and suspension systems. Also instruction is given in the adjustment and repair of individual components and systems such as radiators, transmissions, and carburetors. ((CIP), Appendix C)*

Information gathered from employers and experts in the field of automotive servicing suggests that the nature of automotive servicing as an occupation is changing rapidly, primarily due to rapid technological advances in the design of automobiles and the equipment used to service them. The field is increasingly dependent upon personnel who are computer literate, and who are familiar with computerized automotive systems and diagnostic equipment.

METHODOLOGY

Methods of Data Collection

Literature Search

In order to obtain background information on the automotive industry, a literature search was performed and professional, industry, public and regulatory bodies were contacted. A reference list is provided.

Employer Survey

A telephone survey of 86 employers was conducted in October, 1993. Employers from several employment categories were included: privately-owned repair shops, automobile

dealerships, franchised full-service stations, specialized repair facilities, department store automotive shops, and car or truck rental facilities. (Appendix D). Employers were asked a series of questions regarding hiring practices and potential employment opportunities (Appendix E). Additionally, detailed information was solicited from these employers regarding desired qualifications and specific skill levels for entry level employees. Employers contacted were selected at random from a variety of sources, and included those employers suggested by members of the OCC Automotive Servicing program, Automotive News' Annual Market Data Report, Dun's List, and local telephone directories. Companies representing a variety of sizes and interests were included in order to provide a comprehensive view of employer needs in the local area.

Student Survey

Ninety-four (94) students who had taken at least one Automotive Servicing (ATA) course at OCC during the past academic year completed a telephone survey regarding their motivation for taking Automotive Servicing courses, satisfaction with the program and expectations for using experience/knowledge attributable to their automotive servicing coursework. (Appendix F). Student surveys were completed in September, 1993.

Automotive Servicing "Graduate Follow-up Survey" Data Analysis

Graduate Follow-up Survey data was available for fifteen students who had received associate's degrees from the OCC Automotive Servicing Program between August 1988 and May, 1992. Both quantitative and qualitative analysis of this data was conducted. Narrative responses from automotive servicing graduates appear in their entirety in Appendix G.

Comparative Analysis of Statewide Programs

A review of existing automotive servicing programs in higher educational institutions in Michigan was conducted. Comparisons of enrollment and graduation information were made, and an examination of program content was conducted.

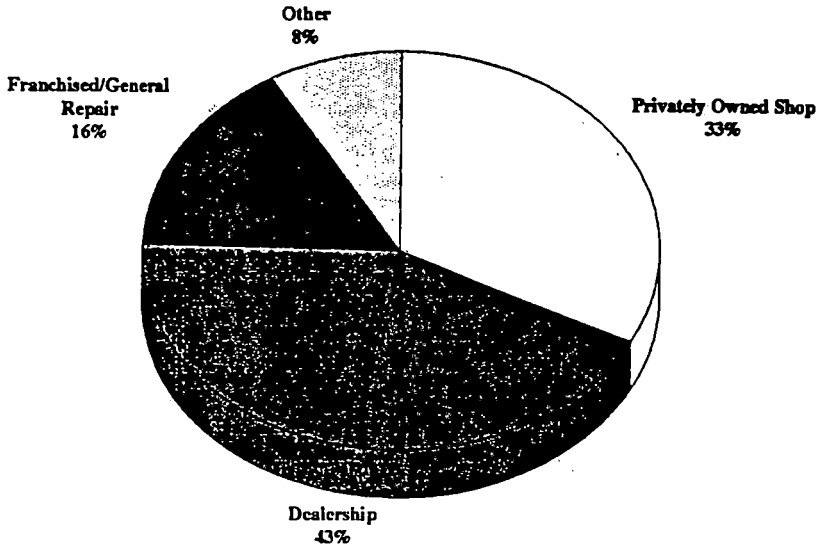
Methods of Data Analysis

A total of eighty-six (86) employers responded to the employer telephone survey (Table 1 and Figure 1). Quantitative analysis of the data was conducted by means of frequency distributions. Verbal responses were analyzed for content (Appendix H).

Table 2
Type of Employers Surveyed

Employer Type	Number Responding	Percent of Total
Privately Owned Shop	28	32.6
Dealership	37	43.0
Franchised/General Repair	14	16.3
Other	7	8.1
All Employers	86	

Figure 2
Type of Employers Surveyed



Ninety-four (94) students who had taken an automotive servicing course in the past academic year were polled regarding their experiences and expectations. Quantitative data was statistically analyzed and content analysis was conducted on the qualitative responses.

ANALYSIS

Automotive Industry Outlook

Industry experts indicate that the automotive service industry is undergoing some significant growing pains, particularly with regard to computerization and technical training. Ronald Meyer, Vice President of the Automotive Service Association of Michigan suggests it is essential that servicing personnel and consumers alike revise the way they view the profession. Increasingly, successful automotive technicians need to be proficient in the use of

computerized business management systems and diagnostic equipment to manage technical and business information. The automotive technician of the future will have strong math and writing skills, will have sharp technical and computer skills, and will have a professional view of him/herself. The increased 'professionalization' of the field is long in coming. Meyer believes that the struggle down the road is to educate the consumer and the technician alike. He suggests that today's technicians are "vehicle doctors," diagnosing and repairing vehicles; as such, they deserve the respect afforded professionals in other technical fields (Meyer, 1993, personal communication).

Automotive service industry experts note that the field suffers from a lingering image problem. One expert claims "This is a profession. The person is a technician, not the grease monkey of old . . . our students are being trained in the use of sophisticated equipment to become diagnostic experts." (R. D. Henriksen, quoted in King, 1985). Traditionally, the automotive service profession has been plagued by an image that suggests to low pay, low status, unsafe and poorly maintained work environments (Shoemaker, 1992). Some believe that the fact that technicians' salaries are not high enough accounts for the low public opinion, and ultimately discourages people from entering and/or remaining in the field. The increasing complexity of newer automobiles has increased the need for highly skilled, technically competent repair personnel, although the automotive servicing field continues to battle the negative image. One industry reviewer suggests that car repair shops should begin to stress quality rather than speed in order to enhance auto servicing's image (De Francesco, 1992). This sentiment is echoed by others who indicate that provision of high quality service to customers will ultimately win customer loyalty and appreciation (Packard, 1992).

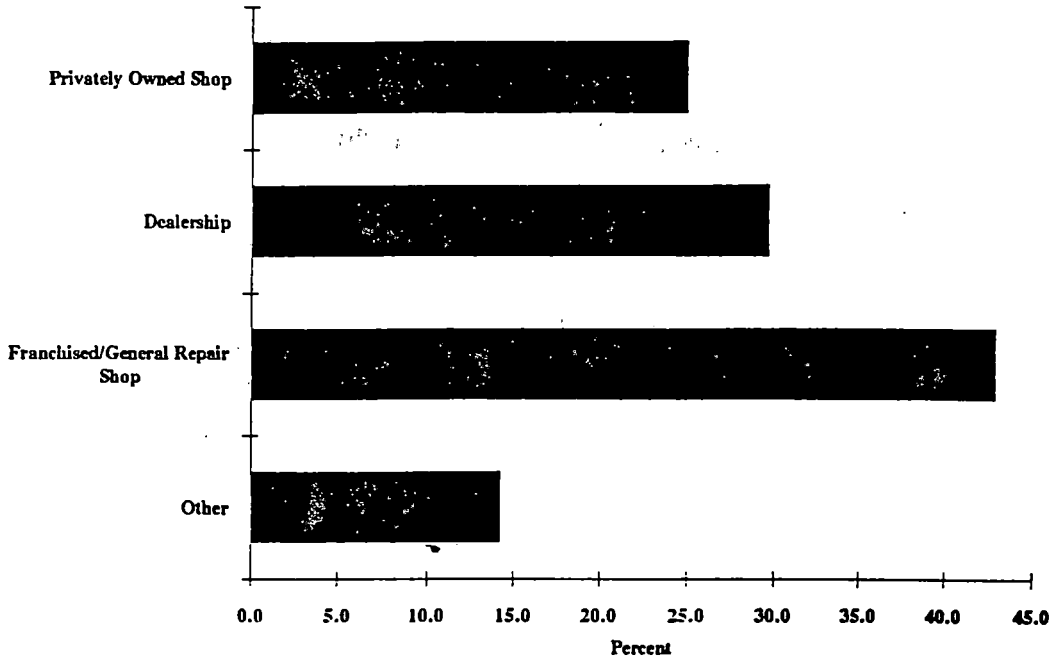
Employment Opportunities

The majority of employers contacted (70.9%) are not hiring entry level personnel with automotive servicing backgrounds at the present time. Employers in franchised/general service facilities (KMart, Sears, Midas etc.) offer the greatest opportunities for current employment, with 42.9% indicating that they are currently hiring entry level service personnel. Approximately one quarter of privately owned shops and dealerships indicate that they are currently hiring (25.0% and 29.7% respectively). Over half (58.3%) of those currently hiring new employees indicated expansion as the primary reason for the hiring, while 45.8% cited employee turnover, and 20.8% gave other reasons. Among the "other" reasons for current hiring were combinations of employee turnover and expansion and changes in customer needs.

Table 3
Percentage of Employers Who Are Currently Hiring

Employer Type	Hiring	Not Hiring
Privately Owned Shop	25.0	75.0
Dealership	29.7	70.3
Franchised/General Repair Shop	42.9	57.1
Other	14.3	85.7
All Employers	29.1	70.9

Figure 3
Employers Currently Hiring



The student survey conducted as a part of this investigation showed that 66.7% of all current students in the automotive servicing program are currently employed full-time. An additional 15.1% are employed part-time. Seven and a half percent (7.5%) of students are unemployed and currently seeking employment, and 10.8% are unemployed, not seeking employment. Of the OCC students who are currently employed, a total of 83.9% are employed in some capacity in the automotive industry. Slightly more than one quarter (25.8%) of current students are working as automotive mechanics/technicians.

Of the employers contacted as a part of the Employer Survey, 58.8% indicated having problems finding well-qualified entry level employees. Those who reported difficulties in locating qualified personnel trained in automotive servicing cited a variety of reasons for their difficulty, including both under-qualified and over-qualified applicants. When asked about the nature of their hiring difficulties, a substantial number of employers noted that hands-on experience was lacking. Specific employer responses included:

Lack of hands-on experience. Book knowledge is not enough.

Lack of professionalism; lack of dependability.

--Must be licensed, but many unlicensed people apply.
--Hard to find good, qualified people.
--Especially hard to find people with good diagnostic abilities

Not many applicants out there. When they come in (they) have little mechanical knowledge of electronics/computers.

Sloppy work.

Don't have ASE certifications. Need females and minorities

Employers were asked to rate the importance of a variety of job-specific skills for their entry level employees. Table 4 and Figure 4 display the percentages of each employer group listing individual skills as "Very Important."

Table 4
Technical/Academic Skills Viewed as "Very Important" for Entry-Level Employees

Characteristic	Number	Percent
Engine Support Systems	49	57.6
Driveability/Emissions Systems	45	53.6
Electrical/Computer Systems	54	63.5
Suspension/ Steering/ Alignment	32	38.1
Brakes/ABS	49	57.6
Automatic Transmissions	23	27.1
Manual Transmissions	19	22.4
Automotive Machining	13	15.5
Service Advising	26	30.6

Figure 4
Skills Ranked as "Very Important"

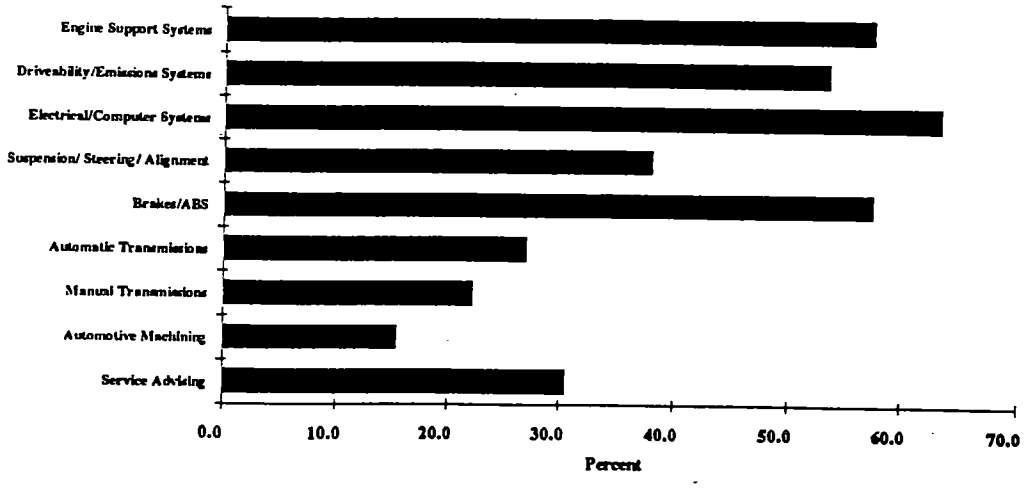


Table 4 and Figure 4 display frequencies for all employers combined. The employer survey involved various types and sizes of employers; the data point to skill areas that may offer greater employment opportunties in the industry as a whole.

Employers participating in the survey also rated a list of personal qualities and academic skills with regard to perceived importance for entry level employees. Table 5 and Figure 5 show the number of employers who listed those skills as "Very Important." Employers surveyed rated writing and math skills as being the least important skills for entry level automotive service personnel. Employers place a high value on the employee's ability to communicate effectively with the customer, and expect employees to have basic mechanical aptitude:

Ability to communicate should be given a lot of attention.

(Need) reading, communication skills. Mechanical theory.

Communication skills.

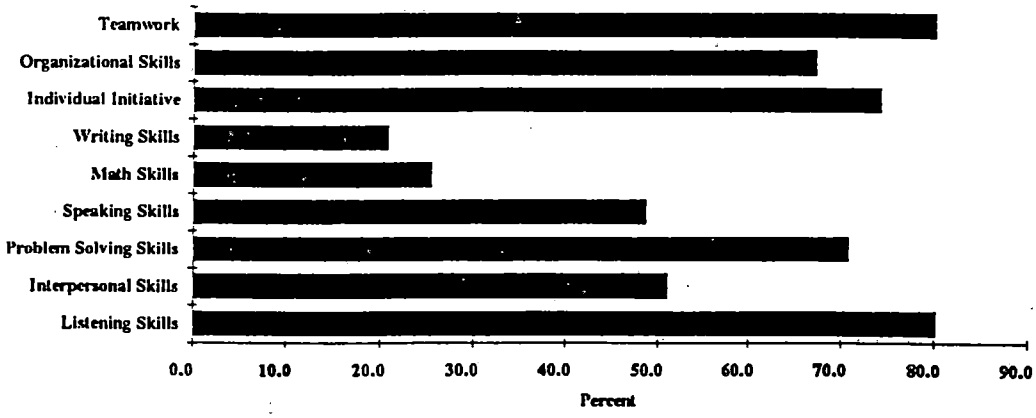
Good with customers; ability to explain in laymen's terms; well-rounded mechanical skills.

Attentive and educated.

Table 5
Personal/General Education Characteristics Viewed as "Very Important" for Entry-Level Employees

Characteristic	Number	Percent
Teamwork	69	80.2
Organizational Skills	58	67.4
Individual Initiative	64	74.4
Writing Skills	18	20.9
Math Skills	22	25.6
Speaking Skills	42	48.8
Problem Solving Skills	61	70.9
Interpersonal Skills	44	51.2
Listening Skills	69	80.2

Figure 5
Characteristics Ranked as "Very Important"



Employment Outlook

The Michigan Occupational Informational System (MOIS) reports that nationwide there were about 771,000 automotive repair technicians employed in 1988. Nationally, employment of automobile servicing personnel is expected to grow more slowly than the average for all occupations through the year 2000. However, MOIS predicts that due to a growing number of vehicle registrations and an "aging fleet," servicing personnel may find greater opportunities for work in the near future. Employment of automotive servicing technicians is expected to increase about as fast as the average for all occupations through the year 2000. Statewide, there are expected to be about 710 openings annually, with 170 due to growth and an additional 540 due to retirements or other forms of attrition. In the State of Michigan, MOIS reports there were about 26,950 employed automobile servicing technicians in 1988. Of those employed, approximately 18% were self-employed. An additional 48% of employed technicians worked in the wholesale and retail trades, and 18.9% were employed by services such as auto repair and rental facilities (MOIS, 1988).

MOIS cautions that the employment of automobile technicians is expected to be affected by two major factors. First, automobile manufacturers have moved to eliminate the need for some types of maintenance work, and have increased the service schedules of other types. Second, the complexity of automobiles continues to increase, with most models now sporting computerized engine controls, anti-lock braking systems, electronic instrument panels, power-boosting turbochargers and new types of transmission and suspension systems. MOIS recommends that the best employment outlook is for those who have factory-supplied training or associates degrees (MOIS, 1988).

Members of the automobile manufacturing industry have created and continue to support a number of programs designed to train technicians for work in their own dealerships on their specific automobiles. The Ford ASSET program, General Motors' ASEP program, the Chrysler CAP, Nissan's PROCAP and the Toyota T-TEN (Toyota Technical Education Network) programs currently provide co-op experiences in their dealerships. Co-op students work directly with service personnel in dealerships as a corollary to their classroom and laboratory work. Co-op programs encourage application of classroom knowledge on state-of-the-art equipment, and promotes the development of a relationship with an employer prior to graduation. At least four Michigan community colleges are currently experiencing success working in those cooperative partnerships: Henry Ford Community College (Ford), Delta College (General Motors), Macomb Community College (General Motors, Chrysler, Ford), and Jackson Community College (Toyota, General Motors). In 1989, it was estimated that the Big Three Automakers trained approximately 2,000 new technicians for their dealerships annually through cooperative programs nationwide (Steiger & Shoemaker, 1989).

Notes from the meeting notes of the OCC Automobile Servicing Advising Committee indicate that the OCC Co-Op program utilizes a network that involves both local high schools and industrial partners to provide opportunities for students. One Advisory Committee member indicated that co-op students need to be aware of the fact that the co-op is intended as a learning opportunity, and that their earnings may not be as high as full-time personnel.

Additionally, it is important to consider that employers involved in the co-op program spend a lot of time in training co-op students. Co-op students who remain with the co-op sponsor after their co-op is completed represent "a good return on (the employer's) investment."

Retraining Opportunities

Ronald Meyer of the Automotive Service Association of Michigan indicates that it is imperative for automotive training facilities to continue to work on issues of access and accessibility. Due to cutbacks within public school vocational training programs, community colleges may increasingly become primary providers of automotive training. Meyer further suggests that rapidly changing technology assures that retraining of current automotive servicing technicians on specific operations or equipment will be a focus in the future. Increasingly, employers are expected to be seeking training at their own facilities for their current employees.

Of the employers surveyed, 85.7% indicated that they provide on-the-job training to their employees. No significant differences in provision of in-house training was noted by employer types. Sixty percent of all employers were aware that OCC offers an Automotive Servicing program. A small percentage of privately owned repair facilities (14.3%) and franchised/general repair facilities (7.1%) indicated that they would be interested in customized automotive servicing training for their current employees. Most dealerships reported that their parent companies were responsible for training and re-training of dealership service personnel.

Employee Benefits

Wage and Salary

The employer survey conducted as a part of this study indicates that remuneration for entry level automotive servicing personnel ranges from an average low of $7.57/hour to an average high of $9.10/hour. These hourly rates should be considered deceptively low, though, as many employers noted that their employees receive commissions in addition to their salaries. As is true in many fields, additional years of experience and specialized training increases one's earnings significantly.

MOIS data indicate that in 1990, the median salary for auto mechanics nationwide was $393 per week. The average hourly wage rates in 1990 for mechanics in the Detroit area are reported to be $16.12 - $18.89. Detroit area apprentices typically earned between $5.81 - $10.57 per hour, and supervisory personnel earned between $12.65 and $22.35 per hour. Depending on the employer, mechanics may receive 1, 1.5 or 2 times their regular pay rate for overtime work. The employer survey shows that many automotive technicians receive compensation that includes a base wage and a commission. MOIS further reports that most automobile mechanics can expect to receive paid vacation and holidays; life, accident, disability, and hospitalization insurance; retirement plans; and sick pay (MOIS, 1990).

Advancement Opportunities

Employers were asked about the advancement opportunities available in their companies for entry level personnel trained in automotive servicing. Although the job titles varied, most employers suggested that there are opportunities for advancement based on one's skill level. Personnel with strong mechanical and diagnostic training might progress from a line technician to a master technician. The opportunities are greatest for people who obtain certifications beyond the basic State certification. Auto Service Excellence (ASE) certifications are said to improve one's chance of being hired initially, and may serve to enhance opportunities for advancement. Persons who demonstrate strong interpersonal skills and managerial abilities can expect to have opportunities to advance to foreman, service advisor or manager. Some service personnel who have strong skills eventually start their own businesses.

Narrative comments from employers were mixed with regard to advancement opportunities:

> A person can work himself all the way up the ladder if he is good and motivated.
>
> Very limited (advancement opportunities) in Michigan. Certain jobs are being eliminated. Mechanics don't make as good money anymore. More people are doing repairs themselves.
>
> Pay raise and management.
>
> With more certification and education -- higher recognition and compensation.
>
> Unlimited opportunities.
>
> Service manager, chief of maintenance.
>
> Promotion to supervisory position.

Opportunities for Minorities and Women

Employers surveyed indicate that attracting qualified women and minority candidates to fill available positions in automotive servicing has been difficult. A major challenge seems to be that of attracting women to the field. The Michigan Department of Education's Enrollment Data Profile indicates that only 5.6 percent of enrollees in the automotive programs statewide are women (Appendix I). The Student Survey conducted as a part of this report indicates that 16 women (6.8%) have taken an Automotive Servicing course in the past year at OCC.

Occupation

Level of Training Needed

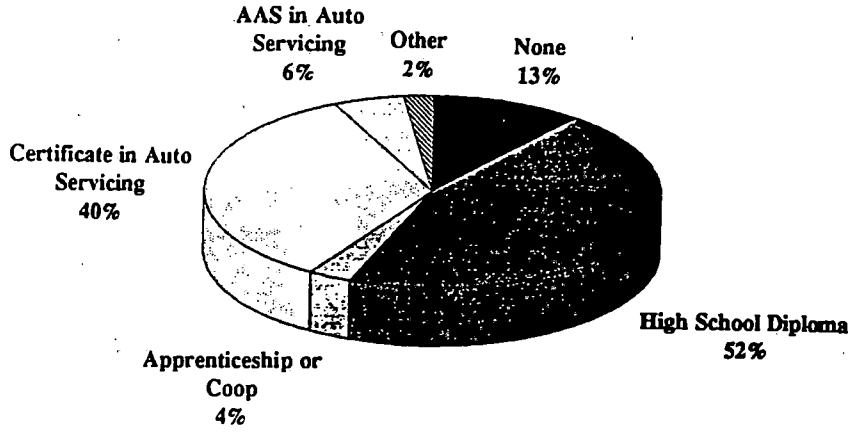
The State of Michigan requires that any person who repairs automobiles for compensation is required to be tested and certified by the State. Students who demonstrate knowledge of all eight certification areas by passing State examinations in those areas are considered Master Automobile Mechanics by the State of Michigan. The State of Michigan does not currently require re-certification of technicians, and under the current system, if one passes the certification examination(s) he/she is certified to repair automobiles indefinitely. Kirk Ferris, an Analyst with the Department of State, Bureau of Automotive Regulation, suggests that a process of re-certification is essential due to the technological changes in automotive systems. Specifically, such equipment as airbags and sensors are increasingly commonplace on newer automobiles. Ferris believes that individuals should be tested on the new equipment, and those who were previously certified should be re-certified on those items periodically. Public hearings are being held this spring to discuss the possibility of changing the rules of Public Act 300 to include a requirement for re-certification in three rapidly changing areas: tune-up performance, electrical systems, and brakes/braking systems. Auto Service Excellence (ASE) certification may be obtained through additional testing. Currently, ASE certifications must be updated through additional testing every five years. If re-certification for mechanics is legislated, Ferris indicates that the ASE certification updates may be used to provide evidence of certifiability, and additional testing for re-certification in those areas may not be required.

Employers responding to the OCC survey were asked to indicate the minimum levels of education, experience or other credentials required for entry level employment (Table 6 and Figure 6).

Table 6
Educational Requirements of Entry-Level Positions

Education	Number	Percent
None	11	12.8
High School Diploma	45	52.3
Apprenticeship or Coop	3	3.5
Certificate in Auto Servicing	34	39.5
AAS in Auto Servicing	5	5.8
Other	2	2.3

Figure 6
Educational Requirements



Employer survey data reveals that most employers either require a high school diploma (or equivalent) (52.3%), or a certificate in automotive servicing (39.5%) for their entry level employees. An additional 12.8% of employers have no specific educational requirement. Automotive servicing degrees are required by only 5.8% of employers (Table 6 and Figure 6).

Adequacy of Currently Available Training

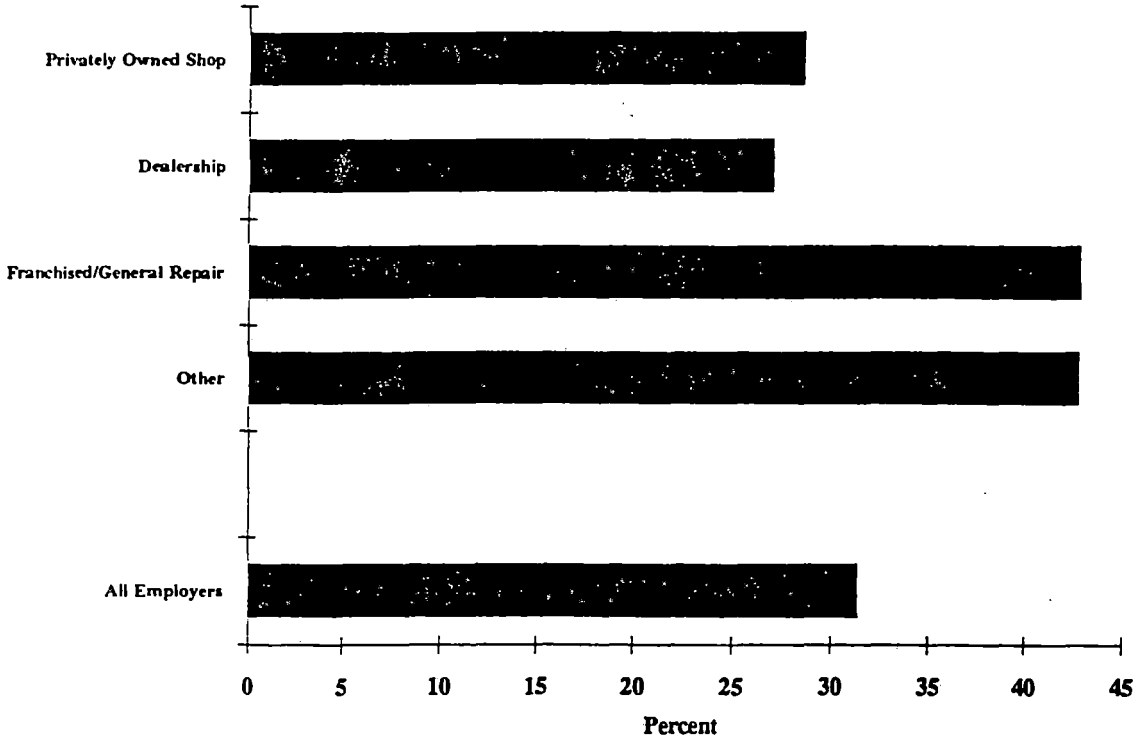
There are a large number of automotive programs in community colleges and high school vocational programs statewide. Additionally, there are a number of proprietary schools, such as MoTech in Livonia, who provide automotive servicing training.

The results are mixed with regard to the level of preparation of entry level employees. Of all employers, 31.4% believe their new hires are adequately prepared to perform up to job expectations, 33.7% believe new employees are sometimes prepared, and 34.9% believe that their new hires are usually not prepared (Table 7 and Figure 7).

Table 7
Perceived Preparation Levels of Entry-Level Employees

Employer Type	Adequately Prepared	Sometimes Prepared	Not Prepared
Privately Owned Shop	28.6	32.1	39.3
Dealership	27.1	37.8	35.1
Franchised/General Repair	42.9	35.7	21.4
Other	42.8	14.3	42.9
All Employers	31.4	33.7	34.9

Figure 7
Employers Who Perceive Entry-Level Employees As "Adequately Prepared"



Several of the employers who noted skill deficits in their entry level employees cited poor hands-on skills. Other employers expressed concerns about applicants' abilities to make common sense evaluations of problems, employees who lacked understanding of the expectations of the work environment, and the inability of new hires to apply their theoretical knowledge to practical situations. Specific narrative responses included:

> The areas are 'across the board' -- they have too little 'hands-on' experience with brakes, exhaust and especially diagnosis problems. Book knowledge is ok, but actual 'hands-on' is often lacking.

> Ability to do a variety of work. (Most people seem to want to specialize, but a person who knows all the systems has a much greater potential in the company)

Cannot work on late model cars. Do not understand the electrical system.

Ability to communicate should be given a lot of attention.

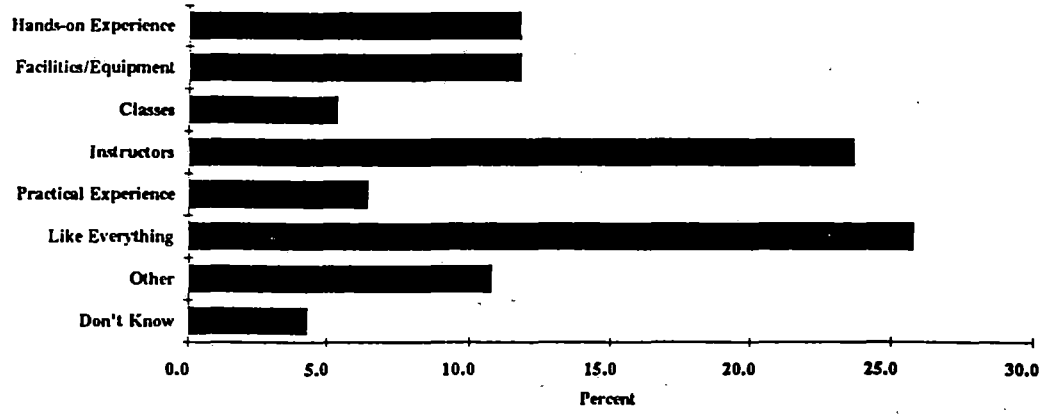
Need experience with actually taking things apart -- learn faster techniques -- time is money.

Data obtained via the OCC Student Survey indicate that students who are taking automotive servicing courses believe that their automotive coursework has been helpful to them in their current employment (78.8%). Students typically expressed positive feelings about the instruction and technology available in OCC's program (Table 8 and Figure 8). Specifically, students indicated that they are happy with the instruction (23.7%), hands-on nature of the program (11.8%), and the facilities/equipment (11.8%) offered in OCC's automotive program. Student narrative responses appear in their entirety in Appendix J.

Table 8
Things Students Most Like about the Automotive Servicing Program at OCC

	Number	Percent
Hands-on Experience	11	11.8
Facilities/Equipment	11	11.8
Classes	5	5.4
Instructors	22	23.7
Practical Experience	6	6.5
Like Everything	24	25.8
Other	10	10.8
Don't Know	4	4.3
No Response	1	1.1
Total	94	

Figure 8
Things Students Most Like about Automotive Servicing Program



Comments from students regarding various program elements suggest that students are pleased with the laboratory portion of the program, and believe that the skills they are learning are applicable to their occupational and personal goals:

Provided all the basic knowledge needed for job. Gives good foundation in fundamentals.

Gives more detailed instruction than what I would have been given at work. Learning more theory.

Instructors are very knowledgeable and helpful to students.

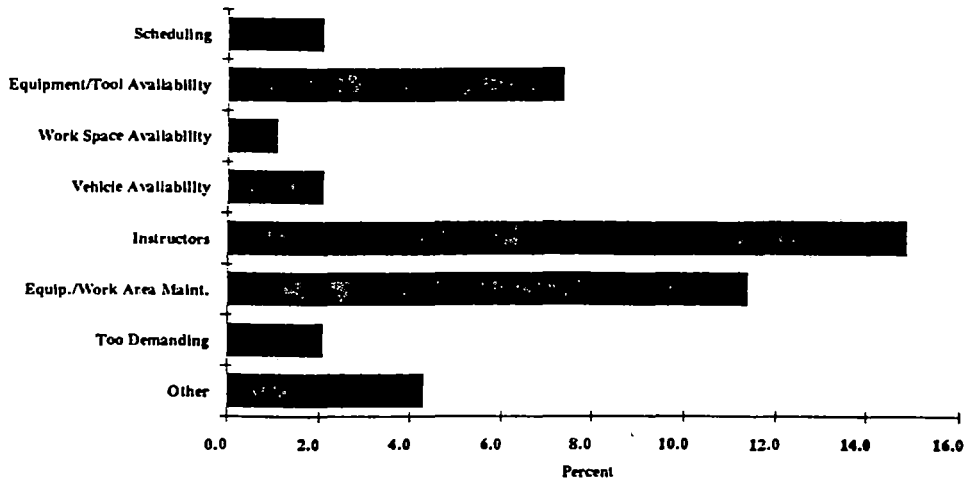
Hope that OCC continues automotive servicing program. There are very few good programs around that are as well equipped and staffed as well.

When asked to indicate what they most disliked about the automotive servicing program, a majority of students indicated "no dislikes" (52.1%). Of those who were dissatisfied with one or more of the program elements, the things they noted included "instructors" (14.9%), "equipment and work area maintenance" (11.4%), and "equipment and tool availability" (7.4%) (Table 9 and Figure 9).

Table 9
Things Current Students Most Dislike about the Automotive Servicing Program at OCC

	Number	Percent
Scheduling	2	2.1
Equipment/Tool Availablility	7	7.4
Work Space Availability	1	1.1
Vehicle Availability	2	2.1
Instructors	14	14.9
Equip./Work Area Maint.	11	11.4
Too Demanding	2	2.1
Other	4	4.3
No Dislikes	49	52.1
No Response	2	2.1
Total	94	100.0

Figure 9
Things Current Students Most Dislike about Automotive Servicing Program



Narrative comments underscore student concerns regarding equipment, instruction and cleanliness/maintenance of the work area.

More staff should be hired to teach the courses scheduled. The two staff members are late or they don't show up at all.

Improve tool check-out. One person runs two tool cribs; often one has to wait more than 15 minutes to get a tool.

The equipment needs to be updated and tools should be repaired.

Instructors could bring in people already working successfully in the field -- would make courses a lot more relevant to what's actually happening in the field.

Time is wasted watching outdated slides, films, etc. -- Not relevant to current industry.

The automotive (department) is supposed to have a teacher's aide. But the instructor should make it known who the aide is to the new students. If the job of the aide is to help the teacher and the student, he is not doing his job.

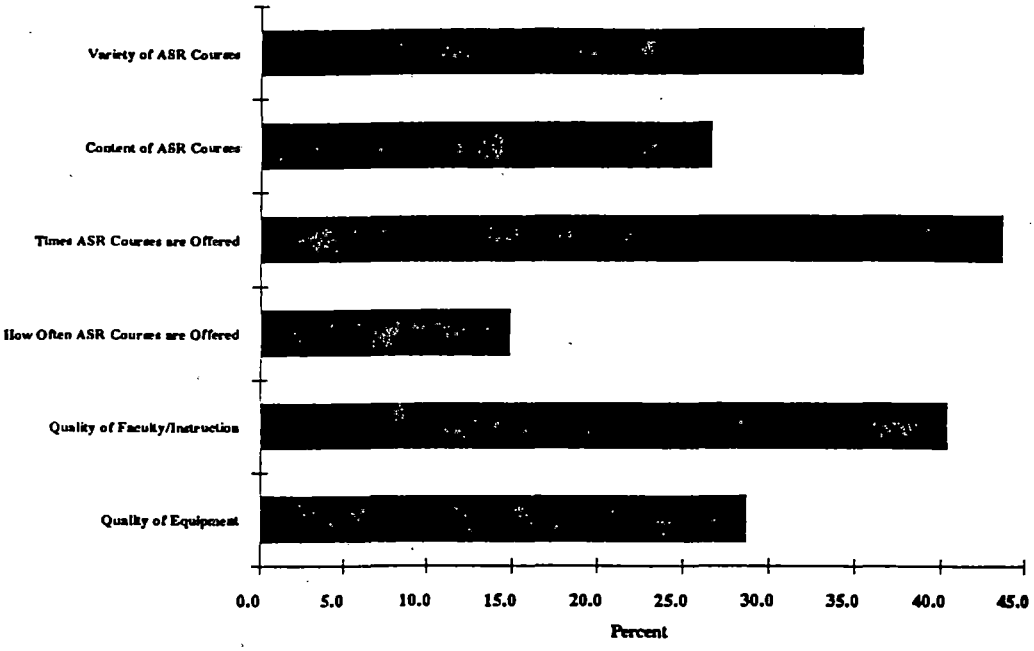
Have instructors get more involved with students. Have them visible in class actually helping students instead of having to look for them when a student has a problem.

Students were also queried regarding their satisfaction with content, resources, and scheduling of automotive servicing courses at OCC. Large percentages of students indicated that they were "Very Satisfied" with the variety of courses (35.4%), content of the courses (26.6%), times of day the courses were offered (43.6%), quality of faculty and instruction (40.4%) and quality of equipment (28.7%). The largest level of dissatisfaction can be noted in terms of "quality of equipment," where we find 27.7% of students are "neutral," and an additional 7.4% of students are dissatisfied (Table 10 and Figure 10). Narrative comments and numerical data point to equipment quality and maintenance as an area that may be in need of specific attention.

Table10
Student Satisfaction with Automotive Servicing Program Elements

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Variety of ASR Courses	35.4	39.4	22.3	3.2	0.0
Content of ASR Courses	26.6	45.7	25.5	2.1	0.0
Times ASR Courses are Offered	43.6	44.7	10.6	1.1	0.0
How Often ASR Courses are Offered	14.9	40.4	41.5	2.1	1.1
Quality of Faculty/Instruction	40.4	35.1	21.3	3.2	0.0
Quality of Equipment	28.7	36.2	27.7	7.4	0.0

Figure 10
Students "Very Satisfied" with ASR Program Elements



Students were asked to comment on their impressions of course scheduling (including time of day, day of week, and frequency of specific course offerings) in the automotive servicing program. The women and men enrolled in Automotive Servicing courses at OCC do not differ significantly in their satisfaction with the OCC program on content, time of day courses are offered, quality of faculty/instruction, or quality of equipment; however, men were significantly less satisfied with how frequently specific courses were offered. No clear pattern emerged with regard to student views of course scheduling. Narrative comments included:

> Classes should be longer, so as to get more in depth with the material.
>
> Would like to see some kind of yearly overview of possible proposed classes for advanced planning.
>
> Current scheduling: Classes in 5-hour blocks. Hard to schedule around jobs. Would like to see more classes divided into 2 1/2 hour segments.
>
> Classes in air conditioning I & II and pneumatics not offered often enough -- would have received degree long ago if they were offered more.

Was forced to take evening classes, would have preferred afternoon, but not enough students signed up for afternoon.

Schedule some classes on Saturday.

Have longer semesters or longer class times -- to allow more time to go over more material. There is not enough time to cover enough.

Automotive Servicing Programs in Michigan

Michigan community colleges offering academic programs in automotive servicing were contacted regarding their programs. There was a considerable amount of consistency noted across programs. Most Michigan community colleges that offer automotive courses (including OCC) prepare students to pass the Michigan Certification examinations required for persons who wish to repair vehicles for wages in the State of Michigan. There is a significant amount of concern within automotive servicing programs regarding two issues: a) the cost to keeping abreast of new technology, and b) maintaining enrollments. The programs with the healthiest enrollments are those with strong connections to the auto makers, particularly through co-op programs (such as ASEP, T-TEN, or ASSET). Co-op programs receive equipment, automobiles and faculty training support and are able to keep up with technological advances with a minimum cost to the institution.

Alpena Community College: The Alpena Community College program stresses the preparation of students to enter the job market as skilled technicians in dealerships, independent garages, and fleet service shops or to work as development and testing lab technicians or assistants. Students enroll in a 6 credit co-op during the summer between their first and second years. Many students find employment with their co-op sponsors for a year or two after completion of the Alpena program. There are one full time and three part time instructors in the program. Program faculty indicate that the program is thriving, with about 15 first year and 8 second year students currently enrolled.

Delta College: Delta College offers two separate and distinct automotive programs: Automotive Technology, and the Automotive Service Education Program (ASEP) sponsored through General Motors. The Delta ASEP program is a two-year program, and students are strongly encouraged to complete the program in consecutive semesters. The ASEP program enrolls about 40 students each year. There are two full time faculty in ASEP, and three faculty in the Delta College Automotive Technology program. Automotive technology students are not trained exclusively on GM vehicles (as are the ASEP students), but on a broad array of vehicle types. Both Automotive Technology and ASEP students benefit from the equipment and vehicle donations from General Motors, as they share facilities for much of the coursework.

Gogebic Community College: The Gogebic program is intended to train personnel to work in the local dealerships and other service positions. Gogebic offers both a certificate and a degree program. Students in the degree program are provided instruction in manual drive trains and are compete paid co-op experiences at local repair facilities. About 15 students were enrolled in Automotive Technology in 1991-92. The program employs two full time faculty. Rigorous general education requirements are hoped to make their students more qualified for advancement to managerial positions.

Henry Ford Community College: The Ford Motor Company maintains a close relationship with Henry Ford Community College's Automotive Technology program through Ford ASSET (Automotive Student Service

Educational Training) program. ASSET is a cooperative program which allows students to spend half of their time working as service personnel in dealerships and the other half of their time in the classroom. When the students graduate from the program they are already hired by a dealership. Students involved in the ASSET program are required to find their own sponsoring dealership prior to admission. Ford supports the program with equipment and personnel but does not pay for the student to attend.

Jackson Community College: The Jackson Automotive Technology program is small, with a total of seven graduates over the past five years. Jackson offers three levels of automotive service technology certificates (Basic, Intermediate, and Advanced) in addition to two Associates Degrees (one specialized toward Toyota products, and one general in scope). The Toyota T-TEN program and the General Motors After Market Network program help to support the Jackson program. Students in the program are employed by a sponsoring dealership as interns prior to starting the Automotive Technology program. The students then maintain a working relationship with that dealership throughout their program. Graduates of the program typically go into service positions and become driveability specialists, diagnosticians, or become counter people in parts stores. The Jackson program is currently being informally reviewed due to declining enrollments and sluggish graduation rates. They currently employ two full-time and one part-time faculty.

Kalamazoo Valley Community College: The Kalamazoo Valley Automotive Technology program is designed to provide students with the technical skills to become competent automotive diagnosticians and mechanics. The program is felt to be stable, with about 18 students currently enrolled in classes. There are believed to be about 4-6 graduates per year from the program. The program employs one full time and 2 part time faculty. A co-op is available to students, although it is not required. Kalamazoo receives generous donations of vehicles through General Motors, Chrysler and Ford.

Kellogg Community College: The Kellogg Community College Automotive Technology program is designed to train students for work in automobile dealerships and independent auto repair operations. Due to declining enrollment, an extensive self study was conducted with regard to the automotive program in 1992-93. While the program was not immediately cut, cost and enrollment concerns make it unlikely that the program will be continued beyond this year. The program currently supports one full time faculty member and enrolls about 50 students. There were five degrees and one certificate granted in automotive technology in 1992-93.

Kirtland Community College: The Kirtland Automotive Technology program has graduated 15 students in the past five years. The department currently employs 1 1/2 to 1 3/4 instructors and augments its program by offering automotive courses in the local high school vocational training program. Kirtland Community College is investigating the possibilities that may be possible for "Tech Prep," a new state-wide program that starts students at the junior and senior high school levels. It is expected that there will be significant ties between junior and secondary schools and community colleges as a result of this program.

Lansing Community College: The Lansing Community College program is geared exclusively to preparing students to enter careers in service positions in dealerships or independent service garages and fleet maintenance. The program currently employs two full-time instructors and 14 part-time instructors. There are usually about ten full-time instructors, but a hiring freeze has made hiring of new faculty impossible in recent years.

Monroe County Community College: There are about 20 students taking courses in the certificate program, and about 15 in the degree program in automotive engineering program at Monroe.

Macomb Community College: The Macomb Automotive Technology program enjoys healthy enrollments and state-of-the-art equipment in great part because of cooperative agreements with General Motors, Ford and Chrysler. While each of the Big Three automakers has a separate agreement with Macomb, all three provide co-op experiences for Macomb students while they complete their associate degrees. Macomb students expect to become employed either as service personnel in local dealerships or may become employed in the manufacturing realm doing such things as developing prototypes for the automakers. Growth in the program is shifting to non-

credit areas, after market training, and in-plant training. Macomb has enjoyed strong enrollment and graduation rates over the past 5 years, granting 14 degrees and 10 certificates in automotive technology in 1992-93.

MoTech: Formerly a Chrysler Motors training center, MoTech was purchased by OE Learning several years ago. The school now operates as an independent proprietary school, serving the needs of all domestic automakers. MoTech works with many local dealerships in retraining, and administers State of Michigan certification tests on site. MoTech boasts a 95% placement rate for its automotive technology graduates. The bulk of MoTech graduates find employment in independent repair/maintenance operations or in dealerships.

Muskegon Community College: The Muskegon Automotive Technology program trains students to become automotive service technicians. The program has an active advisory committee made up of local employers and former students.

Northwestern Michigan College: The NMC program is designed around a series of modules, each of which is designed to give instruction in a particular automotive system. The module system is utilized in an effort to give experienced technicians the flexibility of learning about specific systems; beginning technicians combine modules into a complete course of study geared at preparing them to pass the Master Technician Certification test required by the State of Michigan. Northwestern Michigan College occasionally offers courses specific to GM, Ford, Chrysler and Bosch products.

Southwestern Michigan Community College: The chairman of the School of Technology indicates that there are about 16 first year students and 10 second year students. Most students are full time, non-degree seeking students. Those students who are employed concurrent with their academic work are employed at local repair facilities such as Walmart, KMart and Sears. After completion of their academic work, students often seek employment in dealerships. SMCC works closely with GM on their "GM Product Service Training" program. GM assists the college by providing cars and equipment for student use, although the college spent about $50,000 last year on computer analysis equipment.

Washtenaw Community College: There are two distinct parts to the Washtenaw program, Automotive Servicing Technology and the Emeritus program. The Servicing program has maintained a graduation rate of between four and eight graduates per year over the past five years. The Emeritus program is a program that makes it possible for senior citizens living in Washtenaw County to attend WCC free of charge. Many of the emeritus attendees take occasional courses for personal satisfaction.

SUMMARY

Rapid advances in the technological realm mean that training of automotive service technicians is becoming increasingly expensive and complicated. Experts in the field of automotive servicing caution that persons who are not computer literate will be finding a difficult automotive job market in the future. Cooperative dealership training programs generally receive positive reviews from employers. Additionally, community college programs with strong links with industry find it more financially feasible to offer students the use of state-of-the-art equipment and vehicles. Employers seek employees with strong communication skills and who have the ability to work in a "team" setting.

The majority of employers indicated that they only require a high school diploma (52.3%) or a Certificate in Automotive Servicing (39.5%) for entry level employment.

However, the State of Michigan requires all those who repair cars for compensation to be certified by the State, and it appears that the current program emphasis on the eight critical certification areas is appropriate for OCC's Automotive Servicing Program. Community college and vocational school programs Statewide appear to be quite consistent in their focus. As noted above, those schools who have partnerships with the major automobile manufacturers are most successful in making up-to-date equipment and training available to their students.

The on-going discussions regarding the possiblilty of instituting a re-certification process for the State of Michigan certifications may have implications for automotive servicing programs such as OCC's. Specifically, if currently certified individuals are required to obtain certifications on new automotive systems or components in order to retain their certification (and their ability to work as technicians in the State) there may be an increase in the number of people requiring updated training on these new automotive systems. Re-certification discussions may provide increased incentives for community colleges to remain current and to attempt to develop partnerships that might yield new equipment and vehicles for student use.

Student concerns for the need for upgrading and monitoring equipment echo the reflections of faculty in the *Faculty Perceptions of Occupational Educational Programs Report*. Of specific note is the need for an equitable method for checking out equipment and a possible increase in the number of some tools available for class use. Students also voiced concern regarding vehicles left parked in the automotive shop for long periods of time that make it impossible for other students to utilize that space for legitimate automotive work.

Many employers (60.5%) surveyed were familiar with OCC's Automotive Servicing Program, and some indicated that they would be willing to utilize OCC for automotive training of their personnel if they found that OCC offered courses suited to their specific needs. Further, 31 employers (36.9%) indicated an interest in becoming involved in an advisory capacity to OCC if there is an opportunity to do so.

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APPENDIX A

1993 Student and Financial Data Book

Table 3.7

Trends in Annual Student Headcount by Course Prefix Code*

(Academic Year 1982-83 Through 1991-92)

Course Code	Course Prefix Description	1981-82 Students	1982-83 Students	1983-84 Students	1984-85 Students	**	1986-87 Students	1987-88 Students	1988-89 Students	1989-90 Students	1990-91 Students	1991-92 Students	Percent Change 5- Year	Percent Change 10- Year
ALLIED HEALTH														
DEN	Dental Assisting	354	351	362	193		77	102	31	27	29	28	-72.5	-92.0
DHY	Dental Hygiene	428	467	462	451		452	464	471	471	456	459	-1.1	-1.7
DMS	Diagno. Med Sonography	131	179	189	214		220	195	226	211	190	186	-4.6	3.9
EMT	Emergency Med Tech	368	333	333	409		216	241	195	253	314	425	76.3	27.6
EXL	Exercise Leadership	0	0	77	150		155	168	194	262	352	423	151.8	–
HCA	Health Care Admin.	155	206	248	195		181	176	181	182	185	208	18.2	1.0
HEA	Health	279	391	484	432		545	682	714	756	992	1,044	53.1	167.0
HPT	Hospital Pharmacy Tech	186	188	191	148		134	97	85	87	87	104	7.2	-44.7
MDA	Medical Assisting	302	374	296	180		186	203	188	169	176	227	11.8	-39.3
MED	Medical Technology	837	1,012	1,169	1,074		731	699	524	517	661	803	14.9	-20.7
MHA	Mental Health	459	523	578	614		617	581	496	523	527	529	-9.0	1.1
NCT	Noninvasive Cardiovascular		0	0	0		0	0	0	0	0	121	–	–
NUR	Nursing	735	820	1,363	718		945	1,118	1,292	1,526	1,508	1,914	71.2	133.4
PNE	Practical Nurse Education	870	871	857	782		807	1,013	1,037	1,107	1,037	1,103	8.9	26.6
RAD	Radiologic Tech	0	0	0	0		0	0	0	67	120	134	–	–
RSP	Respiratory Therapy	170	172	187	163		183	209	169	153	148	171	-18.2	-0.6
Subtotal - Allied Health		5,274	5,887	6,796	5,723	**	5,449	5,948	5,803	6,311	6,782	7,879	32.5	33.8
AUTOMOTIVE TECHNOLOGIES														
ADT	Automobile Drawing	0	0	0	0		13	0	19	151	38	177	–	–
APD	Apprentice Drafting	626	292	283	297		340	354	283	305	246	196	-44.6	-32.9
APM	Apprentice Mathematics	412	234	251	357		245	216	152	122	112	86	-60.2	-63.2
APP	Apprentice Physics	187	153	183	220		229	168	141	68	90	94	-44.0	-38.6
APS	Apprentice Shop	86	57	45	55		63	42	16	29	9	13	-69.0	-77.2
APT	Apprentice Technical	612	243	264	288		273	166	119	67	61	49	-70.5	-79.8
ATA	Automobile Servicing	938	909	908	589		438	490	486	447	478	302	-38.4	-66.8
ATF	Fluid Power Tech	110	934	775	548		335	221	119	135	149	106	-52.0	-88.7
ATM	Machine Tool Tech	0	65	115	141		653	316	351	285	367	294	-7.0	352.3
ATW	Welding/Fabrication Tech	424	536	303	222		162	192	132	143	75	72	-62.5	-86.6
AUT	Automotive Tech	190	128	154	96		99	44	29	35	49	14	-68.2	-89.1
CAD	Computer Aided Design	0	0	926	678		1,057	1,081	1,199	1,342	1,468	1,678	55.2	–
CIM	Computer Integrated Mfg.	0	0	0	0		210	173	102	118	174	137	-20.8	–
DHE	Diesel/Heavy Equipment	163	183	161	134		85	106	71	37	2	0	-100.0	-100.0
DRT	Drafting	620	627	1,021	915		1,068	976	991	1,125	1,171	1,119	14.7	78.5
ETT	Electrical Trades Tech	1,028	1,497	1,500	1,290		1,047	927	693	620	446	159	-82.8	-89.4
IND	Industrial Sciences	164	210	198	780		109	101	125	89	132	131	29.7	-37.6
IPD	Industrial Prod. Design	99	133	69	95		52	17	50	36	0	0	-100.0	-100.0

Source: OCC, Office of Institutional Planning & Analysis, SIS & ACS-6 Reports.

Table 3.6

Trend in Annual Student Credit Hours by Course Prefix Code*

(Academic Year 1982-83 Through 1991-92)

Course Code	Course Prefix Description	1982-83 SCH	1983-84 SCH	1984-85 SCH	**	1986-87 SCH	1987-88 SCH	1988-89 SCH	1989-90 SCH	1990-91 SCH	1991-92 SCH	Percent Change 5- Year	Percent Change 10- Year
ALLIED HEALTH													
DEN	Dental Assisting	1,136.0	1,182.0	629.0		244.0	327.0	93.0	81.0	87.0	84.0	-74.3	-92.6
DHY	Dental Hygiene	1,150.0	1,138.0	1,109.0		1,109.0	1,134.0	1,149.0	1,156.0	1,111.0	1,127.0	-0.6	-2.0
DMS	Diagno. Med Sonography	674.0	721.0	830.0		922.0	827.0	963.0	897.0	805.0	788.0	-4.7	16.9
EMT	Emergency Med Tech	1,332.0	1,319.0	1,524.0		868.0	839.0	687.0	833.0	1,111.0	1,443.0	72.0	8.3
EXL	Exercise Leadership	0.0	260.0	505.0		524.0	538.0	605.0	817.0	1,062.0	1,298.0	141.3	–
HCA	Health Care Admin.	597.0	726.0	572.0		525.0	510.0	531.0	532.0	541.0	614.0	20.4	2.8
HEA	Health	1,123.0	1,395.0	1,265.0		1,591.0	2,033.0	2,119.0	2,268.0	2,976.0	3,132.0	54.1	178.9
HPT	Hospital Pharmacy Tech	665.0	704.0	535.0		507.0	377.0	338.0	343.0	337.0	385.0	2.1	-42.1
MDA	Medical Assisting	1,116.0	896.0	541.0		566.0	612.0	579.0	508.0	527.0	714.0	16.7	-36.0
MED	Medical Technology	3,347.0	3,876.0	3,876.0		2,714.0	2,602.0	1,875.0	1,825.0	2,138.0	2,477.0	-4.8	-26.0
MHA	Mental Health	2,506.0	2,724.0	2,910.0		2,934.0	2,754.0	2,370.0	2,516.0	2,540.0	2,556.0	-7.2	2.0
NCT	Noninvasive Cardiovascular	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	323.0	–	–
NUR	Nursing	6,251.0	10,876.0	5,552.0		5,947.0	5,278.0	5,607.0	5,231.0	4,805.0	5,898.5	11.8	-5.6
PNE	Practical Nurse Education	3,426.0	3,363.0	3,067.0		3,137.0	3,905.0	4,097.0	4,336.0	4,062.0	4,333.0	11.0	26.5
RAD	Radiologic Tech	0.0	0.0	0.0		0.0	0.0	0.0	258.0	454.0	511.0	–	–
RSP	Respiratory Therapy	607.0	668.0	566.0		741.0	851.0	684.0	619.0	586.0	676.0	-20.6	11.4
Subtotal - Allied Health		23,930.0	29,848.0	23,481.0	**	22,329.0	22,587.0	21,697.0	22,220.0	23,142.0	26,359.5	16.7	10.2
AUTOMOTIVE TECHNOLOGIES													
ADT	Automobile Drawing	0.0	0.0	0.0		39.0	0.0	57.0	453.0	114.0	531.0	–	–
APD	Apprentice Drafting	876.0	849.0	891.0		1,020.0	1,062.0	849.0	915.0	738.0	588.0	-44.6	-32.9
APM	Apprentice Mathematics	702.0	739.0	1,043.0		706.0	627.0	435.0	356.0	327.0	246.0	-60.8	-65.0
APP	Apprentice Physics	306.0	366.0	440.0		458.0	336.0	282.0	136.0	180.0	188.0	-44.0	-38.6
APS	Apprentice Shop	171.0	135.0	165.0		189.0	126.0	48.0	87.0	27.0	39.0	-69.0	-77.2
APT	Apprentice Technical	637.0	700.0	696.0		694.0	413.0	327.0	151.0	164.0	147.0	-64.4	-76.9
ATA	Automobile Servicing	3,636.0	3,632.0	2,356.0		1,752.0	1,960.0	1,944.0	1,788.0	1,912.0	1,208.0	-38.4	-66.8
ATF	Fluid Power Tech	2,802.0	2,325.0	1,644.0		1,005.0	663.0	357.0	405.0	447.0	318.0	-52.0	-88.7
ATM	Machine Tool Tech	195.0	345.0	423.0		1,959.0	948.0	1,053.0	855.0	1,117.0	882.0	-7.0	352.3
ATW	Welding/Fabrication Tech	1,608.0	909.0	666.0		486.0	576.0	396.0	429.0	225.0	216.0	-62.5	-86.6
AUT	Automotive Tech	502.0	616.0	384.0		396.0	176.0	116.0	140.0	196.0	56.0	-68.2	-88.8
CAD	Computer Aided Design	0.0	2,778.0	2,034.0		3,171.0	3,243.0	3,627.0	4,071.0	4,489.0	5,227.0	61.2	–
CIM	Computer Integrated Mfg.	0.0	0.0	0.0		840.0	692.0	408.0	472.0	696.0	548.0	-20.8	–
DHE	Diesel/Heavy Equipment	930.0	644.0	562.0		340.0	424.0	292.0	164.0	8.0	0.0	-100.0	-100.0
DRT	Drafting	1,881.0	3,063.0	2,745.0		3,204.0	2,928.0	2,973.0	3,375.0	3,513.0	3,357.0	14.7	78.5
ETT	Electrical Trades Tech	4,208.0	4,158.0	3,584.0		2,968.0	2,613.0	1,944.0	1,759.0	1,271.0	494.0	-81.1	-88.3
IND	Industrial Sciences	539.0	503.0	1,672.0		358.0	326.0	363.0	254.0	323.0	406.0	24.5	-24.7
IPD	Industrial Prod. Design	396.0	204.0	285.0		156.0	51.0	150.0	108.0	0.0	0.0	-100.0	-100.0

Source: OCC, Office of Institutional Planning & Analysis, SIS & ACS-6 Reports.

APPENDIX B

Meeting Notes

Automotive Servicing Advisory Committee

AUTOMOBILE SERVICING ADVISORY COMMITTEE MEETING

January 29, 1993

Present: Dennis Alm, Chrysler Training Center
Larry Bennett, Faculty, OCC
Dr. Dorothy Buchan, Dean of Instructional Services, OCC
Joe Burdzinski, CIM Coordinator, OCC
Alice DeGrandchamp, Parts and Tool Crib Attendant, OCC
Mike Goldman, Wide Track Automotive
Jan Harp, Career Education Specialist, OCC
Tony Hildebrandt, Faculty, OCC
Warren Hildebrandt, Rochester High School
Jon Krumwiede, Audette Cadillac
Donald R. Lawson, OCC Student
Willie Lloyd, Director of Placement Services, OCC
Terry McCarthy, Midas Muffler and Brake Shop
Ronald Meyer, Automotive Service Association of Michigan
Dave Morse, Paraprofessional, OCC
Dr. Bill Rose, Dean of Academic Services, OCC
Joanne Schaff, Secretary, OCC
Randy Ston, Counselor, OCC
John Swinter, Swinter Service

1. Welcome

Dr. Buchan welcomed the group and expressed appreciation on behalf of the college for their participation. She invited those present to introduce themselves.

2. ATA Program - Past & Present

Mr. Hildebrandt spoke about the Automotive Servicing Technology Program (ATA 110 - ATA 180) that started in 1975 and what we have done to keep it current. The Automotive Servicing Technology Program is designed to educate the technical and apprentice student in the latest theory, diagnostic techniques and repair procedures required by industry for certification, licensing and employment in the automotive and light truck area.

The courses allow flexibility. If the student elects, he/she can pursue a Specialty Mechanic Classification, Certificate for completion of the General Mechanic's Requirements or earn an Associate Degree in Automotive Servicing Technology.

Some students will be working on skills for entry-level employment requirements, while others will be working mechanics and apprentices trying to improve their knowledge and ability in a particular area.

Students are tested mid-semester and at the end of the semester. The tests are similar to those given for ASE certification and the State of Michigan. Students are encouraged to take their test for certification right away if possible.

Mike Goldman of Wide Track Automotive indicated they supply parts to the college that are needed for the vehicles to be serviced. They try to bring in manufacturers to help with the technology.

After leaving the program it would most likely take three to five years before the graduate is able to be a stand-alone mechanic or journeymen status.

5. Assessment of Graduates

OCC's Co-op Program was brought up and anyone interested should contact Mr. Willie Lloyd, Director of Placement Services. Networking with high schools and interaction with industry allows OCC students opportunity in the Co-op Program.

John Swinter sometimes felt he helped the co-op student grow and then lost them to what the student felt was a better job. The employer needs to be careful so that they will get a good return on their investment. Sometimes employers get individuals who feel they should be making more money early in their career.

6. Potential for Growth of Profession in Oakland County/Southeast Michigan

Terry McCarthy indicated they are looking for technicians and are especially interested in the quality of the technician. Jon Krumweide also indicated they are concerned with the caliber of the technicians.

Warren Hildebrandt, Rochester High School, stated that money is being cut and programs are being lost around the country. Pressure is on kids to go to college, not trade school. He is firmly supporting trade schools and is trying to funnel people into these programs. High school counselors tend to veer a really sharp student away from vocational work. However, students who are in the programs are really interested and find success.

Randy Ston mentioned problems with the propaganda from high school counselors, especially from areas such as Rochester, Bloomfield, etc.. A point should be made to inform these students into the advantages of going into technical programs, such as the fact that an Associate or B.A. degree can be received. Some universities will take those years spent and convert them into credits for a higher degree. The universities will also, under specific circumstances, accept transfer vocational credits.

Warren Hildebrandt indicated that a film should be made showing students working in the automotive shop, and then send this film to schools and counselors.

Dennis Alm suggested vocational system funding should not only go for funding disabled students, the learning disabled and students from disadvantaged families. We need to change the attitudes of counselors.

Dennis Alm said a look should be taken at Tech Prep and the 2 + 2 Program. The SAE also has a Career Night Package, which can be presented to high school counselors, parents and students.

Joe Burdzinski asked as to which types of seminars should be offered. The consensus was basic electronics and automotive electrical seminars.

John Swinter mentioned at one time there was an Inventory Skill Analysis. It showed what training was needed for a technician.

Ronald Meyer questioned OCC's flexibility for location of seminars. Tony Hildebrandt assured the group with OCC's many campuses that flexibility was not a problem.

9. Summary

It was the consensus of the group that the following areas should be monitored:

1. Basic skills for the automotive student.
2. Computer literacy.
3. Standard list of terms - SAE J 1930
4. The Co-op Program should be more widely publicized.
5. NATEP Certification.
6. A current listing of job opportunities. MOIS is two years old. The United States Department of Labor's information is old. There was some discussion about having an automotive technician employment network within OCC.
7. Increased automotive servicing seminars.

APPENDIX C

CIP Codes

Center for Education Statistics:
A Classification of Instructional Programs (CIP)

15.0803 Automotive Technology.

An instructional program that prepares individuals to support an automotive engineer in diagnosing normal or abnormal operation and in maintaining and repairing automotive equipment. Includes instruction in the installation, maintenance, operation, repair, adjustment, or modification or automobiles, trucks, buses, and light industrial or farm equipment powered by gasoline, diesel, or turbine engines and equipped with electrical, hydraulic, pneumatic, or mechanical controls. Also includes instruction in the use and calibration of diagnostic and testing instruments and equipment.

47.0604 Automotive Mechanics

An instructional program that prepares individuals to engage in the servicing and maintenance of all types of automobiles. Includes instruction in the diagnosis of malfunctions in and repair of engines; fuel, electrical, cooling, and brake systems; and drive train and suspension systems. Also instruction is given in the adjustment and repair of individual components and systems such as radiators, transmissions, and carburetors.

APPENDIX D

Employer List

Employer List
Automotive Servicing Program

AAMCO Transmissions, Inc.
5520 Dixie Highway
Waterford Twp., MI

Acura of Troy
1828 Maplelawn
Troy, MI

Alan Ford, Inc.
1845 S. Telegraph Rd.
Bloomfield Hills, MI

Al Dittrich Olds GMC Trucks
5825 Highland Rd.
Waterford Twp. MI

Anderson Honda Car Sales
1819 S. Telegraph Road
Bloomfield Hills, MI

Arrow Trucks & Parts Co.
2637 W. Fort St.
Detroit, MI

Auburn Pontiac, Inc.
500 S. Opdyke Rd.
Pontiac, MI

Audette Cadillac, Inc.
7100 Orchard Lake
West Bloomfield, MI

Autobaun Motors, Inc.
1765 S. Telegraph Rd.
Bloomfield Hills, MI

Auto Electric and Service Center
6205 Highland Rd.
Waterford, MI

Avis, Inc.
Detroit Metro Airport
Detroit, MI

Avon Radiator Service
981 W. Auburn Rd.
Rochester, MI

B & B Auto
2525 Dixie Hwy.
Waterford Twp., MI

Bill Cook Buick, Inc.
37911 Grand River
Farmington Hills, MI

Bill Fox Chevrolet, Inc.
755 South Rochester Rd.
Rochester Hills, MI

Bloomfield Dodge
2125 S. Telegraph
Bloomfield Hills, MI

Bloomfield Eurotech Import
Service, Inc.
673 S. Saginaw
Pontiac, MI

Bob Saks Jeep Eagle
35300 Grand River
Farmington Hills, MI

British Motor Cars
922 Oakland
Pontiac, MI

Chrysler Corp.
Engineering Center
2301 Featherstone
Auburn Hills, MI

Datson Doctor, Inc.
6959 Highland Rd.
Waterford,MI

Dependable Auto Repair
1001 Oakland
Pontiac, MI

Detroit, City of
Department of Transportation
1301 E. Warren Ave.
Detroit, MI

Detroit Forklift Inc.
5630 Davison St.
Detroit, MI

Dietrich Shell Service
1516 Union Lake Rd.
Union Lake, MI

Dixie Auto Service
9200 Wyoming St.
Detroit, MI

Drayton Auto Care
4555 Dixie Hwy.
Waterford, MI

Dreisbach Buick
2225 Dixie Hwy.
Waterford, MI

Duane's Mobil Service
1501 Opdyke Rd.
Bloomfield Hills, MI

Ed Roy's Amoco, Inc.
6480 Sashabaw Rd.
Clarkston, MI

Ellis Tire Centers, Inc.
6031 Joy Rd.
Detroit, MI

Farmington Hills Chrysler Plymouth
24315 Haggerty
Novi, MI

Fischer Buick Mazda Subaru Suzuki, Inc.
1790 Maplelawn
Troy, MI

Ferndale Honda
21350 Woodward
Ferndale, MI

Firestone Tire and Service Center
2385 Elizabeth Lake Rd.
Waterford, MI

Fort Auto Electric, Inc.
180 S. Fort St.
Detroit, MI

Four Seasons Radiator
3649 Auburn Road
Auburn Hills, MI

GKN Universal Transmissions, Inc.
3300 University Drive
Auburn Hills, MI

Glassman Oldsmobile Saab
28000 Telegraph Rd.
Southfield, MI

GM Service Specialists
2605 Dixie Hwy.
Waterford, MI

Golling Chrysler-Plymouth, 90 S. Telegraph Rd.
Pontiac, MI

Goodyear Tire & Rubber 3075 E. Grand
Detroit, MI

Gordon Chevrolet, Inc.
31850 Ford Rd.
Garden City, MI

Gott's Auto Service
5709 Maybee
Clarkston, MI

Jack Cauley Chevrolet Geo
7020 Orchard Lake Road
West Bloomfield, MI

Joe Panian Chevrolet Geo, 28111 Telegraph
Southfield, MI

Joe Lunghamer Chevrolet
475 Summit Drive
Waterford Twp., MI

K-Mart Corp.
15255 Michigan Ave.
Dearborn, MI

K-Mart Corp.
975 S. Opdyke Rd.
Auburn Hills, MI

LaFontaine Pontiac Cadillac GMC, Inc.
2530 E. Highland Rd.
Highland, MI

Marty Feldman Chevrolet
42355 Grand River
Novi, MI

Marx Auto Care Centers
27831 Orchard Lake Rd.
Farmington Hills, MI

Meadowbrook Dodge
3050 Rochester Rd.
Rochester Hills, MI

MDK Performance
10174 Highland Rd.
White Lake Twp., MI

Mel Farr Lincoln-Mercury, Inc.
4178 Highland Rd.
Waterford Twp., MI

Merlin's Mufflers and Brake Shop
4337 Highland Rd.
Waterford Twp., MI

Midas
467 N. Perry St.
Pontiac, MI

Midas
476 S. Rochester Rd.
Rochester, MI

Midas
1500 W. Maple
Troy, MI

Mike Savoie Chevrolet
1900 W. Maple Rd.
Troy, MI

Mitchell Buick Honda
165 N. Gratiot
Mt. Clemens, MI

Monicatti Chrysler Plymouth 40755 Van Dyke
Sterling Heights, MI

Montgomery Ward Auto Express
2200 Elizabeth lake Rd
Waterford, MI 48328

Montgomery Ward & Co.
13551 Michigan Ave.
Detroit, MI

Motor Mart Service Center
123 E. Montcalm
Pontiac, MI

Mr. Muffler
3081 W. Huron
Pontiac,MI 48326

Munk's Import Experts
3080 W. Huron
Waterford, MI

Nick's Automotive Repair
202 South
Rochester, MI

Pat Moran Olds-GMC Truck
3277 S. Rochester Rd.
Rochester Hills, MI48307

Pennzoil 10 Minute Oil Change
1940 N. Opdyke Rd.
Auburn Hills, MI

Pontiac Lake Service, Inc.
8437 Highland Rd.
Pontiac, MI

Pontiac Sports Car Inc.
467 Auburn Ave.
Pontiac, MI

Randy Hosler Pontiac, Inc.
6585 Dixie Hwy.
Clarkston, MI

Rinke Cadillac Co.
8333 11 Mile Road
Warren, MI

Rochester Hills Chrysler
Plymouth, Inc.
1301 S. Rochester Rd.
Rochester Hills, MI

Ron's Auto Clinic
6491 Elizabeth Lake Rd.
Waterford, MI

Sears Roebuck Inc.
Novi, MI

Somerset Pontiac-GMC
1850 W. Maple Rd.
Troy, MI

Sunshine Acura
34900 Grand River
Farmington, MI

Swinter's Service Center
807 E. South Blvd.
Pontiac, MI

Tim's Auto Repair
7135 Cooley Lake Rd.
Union Lake, MI

Tom Holzer Ford, Inc.
39300 W. 10 Mile Rd.
Farmington Hills, MI

Wolverine Motor Rebuilders
5133 Tireman St.
Detroit, MI

Yellow Freight System, Inc.
7701 W. Jefferson Ave.

APPENDIX E

Employer Survey

Survey Number_____

Automotive Servicing
NEEDS ASSESSMENT
EMPLOYER TELEPHONE SURVEY

Name of Business:_____

Type of Business: _____

City and Zip Code:_____

elephone: _____

A. Once you reach the Service Director or other appropriate supervisor, be sure to record:

Name: _____

Title:_____

Phone:_____

Time Interview Begins:_____

Survey

1. How would you categorize your company type? *(You may read them the choices, but check ONLY ONE)*

   1 _____ Privately owned shop
   2 _____ Automobile dealership
   3 _____ Franchised full-service station *(Shell, Gulf, etc.)*
   4 _____ Specialized repair facility *(Midas, Tuffy, etc.)*
   5 _____ Department store automotive service *(i.e. Sears, K-Mart, Wards)*
   6 _____ Car or Truck Rental Company *(Avis, Hertz etc.)*
   7 _____ Other, please specify:

2. Are you currently hiring automotive servicing personnel?

   1 _____ Yes *(Go to 3)*
   0 _____ No *(Skip to 4)*

3. What is the primary reason for hiring these employees?

   _____ Expansion of the company
   _____ Employee turnover
   _____ Other reasons. Please specify:

4. Do you experience any difficulty finding entry level personnel trained in automotive servicing?

   1 _____ Yes *(Go to 5)*
   0 _____ No *(Skip to 6)*

5. What kind of problems do you encounter?

6. In general, do you feel that applicants for entry level positions with your company are:

   Adequately prepared? _____ *1 (Skip to 8)*
   Sometimes prepared? _____ *2*
   Usually not prepared? _____ *3*

. What do you find to be the area(s) in which entry level personnel are unprepared for employment?

8. What is the starting salary range for **entry level** personnel in Automotive Servicing? *(If they pay on commission, ask them to estimate the average hourly or weekly wage)*

Entry Level Salary Range

$ _____ to $ _____ per hour

9. Approximately what percentage of your service personnel are:

1 _____% Full time (more than 30 hrs./week)

2 _____% Part time (less than 30 hrs./week)

10. What is the minimum **educational** qualification required by your company for entry level personnel? *(Check all that apply)*

a) No specific educational requirement _____
b) High School or equivalent _____
c) Completion of Apprenticeship/Co-op _____
d) Certificate in automotive servicing _____
e) Associate's degree in automotive servicing _____
h) Other education or degree, not listed. Please explain:

11. Do you provide tuition assistance (or other incentives) for your employees to improve their automotive servicing knowledge and skills?

1 _____ Yes
0 _____ No

12. Please rate how important it is for entry level automotive service personnel to have a strong knowledge base regarding the following systems, using the scale: 3=Very Important, 2=Somewhat Important, 1=Not Important.

	Very Important	*Somewhat Important*	*Not Important*
a. Engine and Support Systems	3	2	1
b. Driveability and Emissions Systems	3	2	1
c. Electrical/Computer Systems	3	2	1
d. Suspension, Steering and Alignment	3	2	1
e. Brakes, ABS	3	2	1
f. Automatic Transmissions	3	2	1
g. Manual Transmissions and Final Drives	3	2	1
h. Automotive Machining	3	2	1
i. Service Advising	3	2	1

13. Are there any other specific techniques you would like your entry level automotive service personnel to have learned?

14. Please rate the importance of the following skills for entry level technicians, using the same scale: 3=Very Important, 2=Somewhat Important, 1=Not Important.

	Very Important	*Somewhat Important*	*Not Important*
a) Ability to work as a team member	3	2	1
b) Organizational skill	3	2	1
c) Ability to use individual initiative	3	2	1
d) Writing skills	3	2	1
e) Mathematical skills	3	2	1
f) Good speaking skills	3	2	1
g) Problem solving skills	3	2	1
h) Interpersonal skills	3	2	1
i) Good Listening skills	3	2	1

15. Are there any other personal skills you would like your entry level automotive servicing personnel to have? Please explain.

16. What is the single most important quality or characteristic you look for when you are hiring automotive servicing personnel?

17. What related advancement opportunities are available for employees with automotive servicing skills?

18. Does your company provide any on-the-job training for automotive servicing personnel?

1 _____ Yes *Go to 19*
0 _____ No *Skip to 20*

19. Would you explain the nature of the training?

20. Are you aware that OCC offers an automotive servicing program?

1 _____ Yes
0 _____ No

21. Would your company be interested in sponsoring co-op experiences for OCC students in the automotive servicing program at OCC?

PAID
1 _____ Yes
0 _____ No
9 _____ Uncertain, please explain

UNPAID

1 _____ Yes
0 _____ No
9 _____ Uncertain, please explain

22. OCC offers specially designed training and education programs for individuals and groups. Does your company have training or education needs that might be met in this way?

0 _____ No
7 _____ Uncertain
1 _____ Yes, Please explain:

23. Would you be interested in assisting OCC in the design and development of the Automotive Servicing Program? *(This could include activities such as focus groups, advisory committees...)*

0 _____ No
1 _____ Yes

24. Are there any other comments you would like to make at this time?

Thank you for your time and assistance. We appreciate your help and believe that your responses will help to influence what happens at OCC in the future. If you have any further questions please contact the Office of Planning and Analysis at (313) 471-7746.

APPENDIX F

STUDENT SURVEY

Student's Social Security Number:_____

SURVEY

1. What were your reasons for taking automotive servicing courses at OCC? *(Check all that apply)*

1 _____ To obtain an educational certificate.
2 _____ To obtain a degree.
3 _____ To complete courses necessary for transfer to another college.
4 _____ To prepare for a new career.
5 _____ To improve your knowledge, technical skill or competency for your job.
6 _____ To comply with your employer's requirements.
7 _____ To increase your chances for a raise and/or promotion.
8 _____ To maintain your personal vehicle(s).
9 _____ For personal development.
10 _____ Other._____

What was the single most important reason?

2. What is your current employment situation?

0 _____ Self employed
1 _____ Employed full-time. *(Go to question 3)*
2 _____ Employed part-time. *(Go to question 3)*
3 _____ Unemployed. Not employed but actively seeking employment *(Go to question 6)*
4 _____ Not employed and not seeking employment, *because of choice, illness, full time study, retirement, pregnancy or any other reason. (Go to question 6)*

3. What is your current occupation? *(specific job title)*

4. To what extent is your current employment related to the coursework you have taken in automotive servicing?

3 _____ Highly *(go to 5)*
2 _____ Somewhat *(go to 5)*
1 _____ Not at all *(skip to 6)*

5. Has the coursework you have taken in automotive servicing at OCC been helpful to you in your current employment?

1 _____ Yes
0 _____ No

In what way?

6. How do you plan to use the knowledge and skills gained in your automotive servicing courses at OCC, in the future?

7. Is automotive servicing your major field of study at OCC?

1 _____ Yes. *(Skip to 9)*
0 _____ No. *(Go to 8)*

8. What is your major field of study? _____

9. What do you or did you most like about the Automotive Servicing course/program?

10. What do you or did you most dislike about the Automotive Servicing course/program?

11. Please rate your level of satisfaction with the following aspects of the Automotive Servicing program using the scale, 5=Very Satisfied, 4=Satisfied, 3=Neutral, 2=Dissatisfied, 1=Very Dissatisfied.

		Very Satisfied	*Satisfied*	*Neutral*	*Dissatisfied*	*Very Dissatisfied*
a)	The variety of automotive servicing courses offered	5	4	3	2	1
b)	The content of automotive servicing courses	5	4	3	2	1
c)	The time of day automotive servicing courses are offered	5	4	3	2	1
d)	The frequency with which specific courses are offered	5	4	3	2	1
e)	The quality of faculty/instruction in automotive servicing	5	4	3	2	1
f)	The quality of equipment/technology available at OCC for student use	5	4	3	2	1

12. What <u>time of day</u> and <u>day of week</u> are best for Automotive Servicing courses to be offered? *(Check only ONE choice in the day category, and only ONE in the time category)*

1 ____	Monday	1 ____	7:00 a.m. - 9:00 a.m.
2 ____	Tuesday	2 ____	9:00 a.m. - 11:00 a.m.
3 ____	Wednesday	3 ____	11:00 a.m. - 1:00 p.m.
4 ____	Thursday	4 ____	1:00 p.m. - 3:00 p.m.
5 ____	Friday	5 ____	3:00 p.m. - 5:00 p.m.
6 ____	Saturday	6 ____	5:00 p.m. - 7:00 p.m.
		7 ____	7:00 p.m. - 9:00 p.m.

13. Do have any suggestions for how the scheduling of Automotive Servicing classes can be improved?

14. Is there any other comment you would like to make about the automotive servicing course/program at OCC?

"Thank you very much for your time and assistance. We sincerely appreciate your help."

APPENDIX G

Graduate Follow-Up Survey

Narrative Responses

Graduate Follow-Up Survey
Narrative Responses
Automotive Servicing Graduates, August 1988 - May 1992

Question 23

6/91 In regard to the majority of the courses I have had, they was rated as excellent but some of the automotive courses have left me very dissatisfied by receiving as much knowledge as I expected from the class.

4/91 *Very Satisfied*
With few exceptions, I found the instructors caring and very qualified. Larry Bennett, Larry Pennefather and Janet Long were instrumental in my class selection and overall experience at OCC. Great people!!! Jim Bastin was also excellent.

4/91 *Satisfied*
The courses were good, as well as the instructors, I learned much, and it was a good experience for me.

4/90 *Satisfied*
Some courses don't relate to my job. Other classes to me are understandable, but seem harder for beginners.

4/91 *Satisfied*
I've always enjoyed learning.

8/91 Night classes. What he got out of it, was what he put into it.

6/91 *Satisfied*
The educational experience was good but after I graduated it seemed at the time that the automotive future declined, therefore making it hard to apply my education toward a future job.

4/91 *Very Satisfied*
The courses required to get my degree resulted in a well-rounded educational experience. The hands-on portion of my degree thoroughly covered what was taught in the classroom, while the general education classes helped to round out my total educational experience.

4/89 *Satisfied*
The automotive program is adequate. Instructors are knowledgeable.

Question 24: "Are you interested in taking other courses at OCC?"

8/90 More electrical and electronics classes as well as math

4/90 Need 5 more classes for my degree.

4/91 Required courses and possible special interest courses (for personal use) computer, stained glass, photography.

12/89 Computer courses.

8/91 Quality assurance.

6/91 Tax preparation courses, auto body courses.

8/91 Not sure

4/91 Possibly a computer related class.

4/91 A robotics or hydraulics course

6/89 Automotive electronic engine controls, anti-lock braking systems.

Question 25: Do you have any suggestions for improving OCC's programs, courses, or services?

6/91 The automotive department needs to teach more facility aspects as to the tune up area, electrical, and computer knowledge in the regards to trouble shooting codes, engine rebuilding all aspects and details in order to make sure the student thoroughly understands it.

8/90 Listen to Larry Bennett and Larry Pennefather. I really enjoyed Janet Young and her class also. Edna and Mr Trenyser were also helpful, as well as Harvey Eschenberg.

4/91 The counselors need to be better informed, so they can provide accurate information to students. OCC should charge students less if they take courses at night, because no services are provided, everything is closed. The cafeteria at Auburn Hills is terrible, the students deserve better food.

4/90 You never see TV ads, like MSU, Oakland University.

12/89 Automotive department needs more classes in fuel injection and related electrical systems.

8/91 Quality Assurance courses are more difficult to get into. More offerings.

6/91 OCC's programs and courses were fine but the financial aid department needs to be more clear on dealing with financial aid.

4/91 I think that some of the math classes should be taught over a period of two semesters instead of one. In the algebra class I took, 20 students dropped the class because the instructor covered too much too quickly.

6/89 Automotive garage needs better policing -- too many students use it for indoor parking with no intention of working on their vehicles. Automotive program needs running engines on test stands or dynamometers that can be used for problem diagnosis and troubleshooting.

APPENDIX H

Employer Survey

Narrative Responses

EMPLOYER SURVEY
Narrative Responses

Q 5. What kind of problems do you encounter?

01. Undependable people.
03. We usually place an ad in the paper--we get over-experienced applicants. We only want entry-level personnel that we can send to Acura training.
05. Employee has an "idea" of what he should do, but takes too many short cuts. In this field, they're called "Hacks". Also, their general appearance is sometimes poor.
07. Depends on situation (college trained personnel are at a higher level than High School grads).
08. "Good people"-- (knowledgeable enough to be successful technicians) --willing to work (laziness is a problem.)
10. --Must be licensed, but many unlicensed people apply
--hard to find good, qualified personnel.
--especially hard to find people with good diagnostic abilities.
11. Not properly educated in the basics of auto repair.
14. Hard to pay competitive wages; wages that bigger companies pay employees.
15. None come in but qualified, exhaust work.
16. Not many applicants out there when they come in have little mechanical knowledge of electronics/computers.
17. Lack of licensing by State. They don't have licenses.
19. Sloppy work.
20. Lack of knowledge concerning Honda Services quality.
21. Seasonal-- loses personnel in the summer.
23. Qualifications--usually hires have no experiences with the type of work.
24. Lack of exercising with GM products--no computer skills.
25. Knowledge of proper auto repair.
30. Lack of experience in field--applicants have book knowledge but no hands-on experience.
31. Specialized problems--restoration.
32. Qualifications and good attitude.
34. Can't find good people.
35. Lack of professionalism; lack of dependability.
37. Don't have technical degrees no ASE Certifications need females and minorities.
38. Not qualified.
40. Not qualified; have very few applicants; have been looking for a new employees for 1 year.
41. No one is looking for a job.
42. Inexperience.
43. Inexperienced.
49. Well qualified+ hard working personnel.
51. Low number of qualified applicants.
52. No experience (hands-on).
53. No hands on experience.
56. Lack of good working habits.
57. Familiarity with GM product, high quality.
58. Not enough responses to ads.
59. Lack of hands-on-experience book-knowledge not enough.
60. Lack of hands-on-experience.
63. Not properly trained in basics.
64. Unreliability; poor attendance drugs etc.
65. No experience in the field.
66. Most are not prepared to do the job.
68. Most are not prepared and don't have experience.
69. They do not have the experience.
70. Need more electrical training.

73. Lack of knowledge, not willing to work.
74. Not trained.
81. Yes, it's hard to find someone trained in the field.
82. No, hands on experience.
83. A hard time finding people trained in Auto servicing.
86. No hands on experience.

Q 7. What do you find to be the area(s) in which entry level personnel are unprepared for employment?

01. No experience in particular area for which they are applying.
04. -Over educated, --Under educated.
05. The areas are"across the board"-- they have too little "hands-on" experience with brakes, exhaust and especially diagnosis problems. Book knowledge is OK, but actual "hands-on" is often lacking.
07. --Writing skills.
--Need more"hands-on" experience.
08. All levels "Most entry level personnel are unprepared across the board"
10. --Come to apply with no pencil, dressed shabbily.
--So many applicants lack basic skills.
11 Reading, communication skills. Mechanical theory.
12. --Ability to do a variety of work (most people seem to want to specialize--But a person who knows all the systems has a much greater potential in a company)>
15. Not certified in brakes.
16. Electrical and emissions.
17. Unfamiliarity with product--The Cadillac. Unable to fix them properly.
19. Slowness and under qualified.
20. Don't have transportation--don't want work to 55-60 hrs/week (7.30a.m.-7.00p.m.)
25. Overall experience with new cars.
26. No experience.
30. Driveability.
31. Dealing with British cash.
33. More experience/training in mechanical computer areas.
36. Need electrical training, diesel knowledge; air ride suspension; electrical & pneumatic operations (most mechanics never have worked on buses)
37. Not state certified.
38. Totally unprepared for this type of work.
40. Cannot work on late model cars. Do not understand the electrical system.
41. Employees do not know what they want to do.
42. Completely in experienced.
43. Lack knowledge of foreign auto repair.
45. Auto knowledge.
48. Ability to communicate should be given a lot of attention.
49. No hands-on experience.
51. Hands on experience.
52. Lot of book knowledge but no hands on.
53. Too much diagnostic time-ups steering and suspension.
54. Don't know freight systems.
55. Low computer knowledge.
56. Lack of good work habits.
58. Lack of common sense in applying basic knowledge.
59. Need experience with actually taking things apart-learn faster techniques-- time is money.
60. Heavy repair, lack of work ethics.
61. Basic experience is what they don't have.
62. They don't have the experience most mechanic's have.
63. Basic skills.

64. Electronics.
65. Electrical transmissions.
66. Transmissions.
67 Brakes computer systems.
68. Computer systems, Transmissions.
69. Machining, brakes electrical.
70. Not experienced.
71. Don't expect skills. Mechanical aptitude.
73. Lack of knowledge.
74. Totally unprepared.
77. Unfamiliar with product.
79. Have general knowledge--not specific enough for company needs.
81. Most have no hands on experience.
82. Electrical systems.
83. Electrical and driveability.
84. Driveability.
85. No hands on experience.
86. Electrical and machining.

Q 10. What is the minimum educational qualification required by your company for entry level personnel?

06. State of Michigan license.
07. State certificate in 2 categories.
08. 2 ACS certifications & 3 State certifications.
10. NO specific educational requirement. If he had some employees that couldn't read/write, but were excellent in their diagnostic +repairing abilities.
23. Experience 2 years.
25. Experience with Cadillac 5 years.
29. GM Asset Program or Equipment experience.
37. BS degree in Auto-technical field.
38. Experience.
41. State certified.
52. 2 years experience.
54. Prefer Bachelors in Transmissions.
57. GM Asset training.
71. State Certificate in automotive servicing.
72. State certificate in automotive servicing.
73. State certificate in automotive servicing.
74. Must have State certificate in automotive servicing, prefer ASE.
75. Certification helpful but not required. Additional courses school training helpful but not required.
76. State license. Prefer ASE.
77. Some technical training.

Q 13. Are there any other specific techniques you would like your entry level automotive service personnel to have learned?

02. Climate control, air conditioning/heating.
03. No, everything is covered by Acura training.
05. Yes, customer relations.
06. ASE certification.
08. Mote than just the basics--more diagnostic abilities. A problem is that most school trained employees are generically trained, but have to be trained in GM or Ford, etc., when hired into company. Every car is designed differently and "generic" training is not very successful.
10. Covered all above. If someone were competent in the above he would be tickled pink.

12. Getting along with people not afraid to share knowledge with others.
13. Better hands on knowledge. With cars & repairs. Able to do trouble shooting.
14. No, they will learn it on the job.
22. Rear+ front end-- transfer cases differential cu joints.
28. Fluid and pressure control.
31. Body work.
36. Pneumatic; hydraulic training.
37. Climate control; heating and air-conditioning.
39. Experience.
41. Hands on experience.
44. Well informed and certified.
45. General knowledge.
46. Communication skills, able to deal with public.
47. Ability to communicate, comprehend.
48. Ability to communicate.
57. GM asset training
58. Know tools.
59. No-after classes must do hands on work.
64. Being able to quickly diagnose a situation.
70. Electric training important.
71. Would like to see incoming entry level to have State Certified auto exhaust AET Certificate.
72. General knowledge of car systems.
75. Background in acetylene and arc welding; back ground in general machining.

Q 16. What is the single most important quality or characteristic you look for when you are hiring automotive servicing?

02. Knowledge of heating and air conditioning.
03. Personable, receptive to training.
04. Honesty.
05. Qualifications; appearance; attitude.
06. Sense of knowing what they are talking about.
08. Willingness to work; an understanding that a customer's car is the most important thing in the world.
09. Honesty.
10. Willingness to learn and a good attitude.
11. Honesty (not only in regard to stealing etc but honest about own skills.
12. Teamwork.
13. Ability to do job; personality wants to get job done.
14. Capability and honesty.
17. Team work attitude minimum level of intelligence receive many applications that are not fully filled out.
18. Interview how they present themselves.
19. Certified. Do what they say they can do.
20. Communication.
21. General knowledge foreign +domestic vehicles.
22. Reliability.
23. Good attitude.
24. Clean cut professionals.
25. Strong automotive skills- they service large volumes of vehicles.
26. Reliability.
27. Educational background.
28. Background.
29. Ability to work on British cars.
30. Reliability.
31. Good with customers; ability to explain in lay-menu's terms; well rounded mechanical skills,
32. Ambition.

33. Work record-look for times spent on previous jobs.
34. Good attendance.
35. Technical ability; people skills,
36. Common sense.
37. Trained & good job experience.
38. Depends on person; able to deal with problems.
42. Good attitude.
43. How they represent themselves Certification.
44. Attitude, then personality; looks; grooming; ability to deal with people.
45. Knowledge.
47. Mechanical ability; diagnostic skills.
48. Ability to communicate.
49. Reliability.
50. Ambition & availability to work.
51. Attitude.
52. Ready to work.
53. If they are focussed & have a good idea of their career path it shows their level of commitment.
55. Attentive & educated.
56. Self confident; outgoing personality.
57. Computer knowledge.
58. Self-confidence.
59. Basic knowledge.
61. Must be personable. Appearance.
62. Experience.
63. Integrity; skill level.
64. Reliability willingness to buy tools.
65. Honesty.
66. 2 year degree and mechanical test.
67. Personality.
68. Experience.
69. Someone willing to work and learn.
70. Cleanliness; ability to speak.
71. Ability to learn; good attitude.
72. Look at schooling--how they come across in an interview.
73. Certification-willing to do a good job.
74. Electrical skills,
75. Experience/background.
76. Commonsense.
77. Punctuality + good attitude,
78. Experience.
79. Enthusiasm: willingness to learn.
80. Ability to come on time and do a good job.
81. Knowledge, background.
82. Commonsense.
84. Technical Experience.
85. Character.
86. Experience.

Q 17. What related advancement opportunities are available for employees with automotive servicing skills?

02. Higher pay.
03. Line technician -- up to -master technician
04. Depends on skills of technician.
05. A person can work himself all the way up the ladder if he is good & motivated.

06. A person can move up to management level.
07. Can't answer.
08. A person can work himself up through management.
09. Advanced to full line technicians.
10. Owner or manager of shop (he would like to find someone who was an excellent mechanic & possibly sell shop in the future to that individual).
11. Service management.
12. Very limited in Michigan-certain jobs being eliminated-- mechanics don't make or good anymore--more people are doing repairs themselves,
13. Foreman, service manager.
14. On commission more cars fixed higher pay.
15. Increase pay, vacations and management.
16. Pay raise and management.
17. To rise to mid-level management, technicians, or to work in front office.
18. Pay rate.
19. Raises.
20. Pay scale + promotional.
21. Pay scale.
22. Pay scale.
23. Pay scale.
24. Pay scale.
25. Pay scale-- become master technician
26. Promotions.
30. Pay scale.
31. Pay scale.
33. Additional compensation.
34. Pay scale + promotions.
35. Promote to mechanic, service manager, store manager.
36. Promote to journeyman mechanic or supervisor.
37. Promote anywhere-across the country; in different zones; district manager; zone manager; home office staff position.
38. Compensation.
39. With more certification; education-higher recognition & compensation.
41. Compensation.
42. Higher pay.
43. Pay.
45. Pay (increased wages).
46. Advanced pay.
47. Increase in pay-no titles.
48. Union directed, executive garage a prestige position, people usually retire from the position .
49. Pay raises.
50. Pay raises.
52. Pay.
53. Sales + management.
54. Promotion to supervisory position.
55. Pay scale.
56. Tire installer-service advisorr-technician.
57. Promotion within GM.
58. Customer service rep; Service advisor.
59. Could get own franchise.
60. Service manager, chief of maintenance.
61. Technician
62. A technician's position.
63. Dispatcher or higher.
64. Many from shop foreman to service manager.

65. Supervisor or technician position.
66. Mechanic and supervisor position.
67. Auto servicing position and supervisor position.
68. Supervisor and manager position.
69. Manager and supervisor.
70. Compensation.
71. Up to management.
72. From entry level to technician to manager.
73. To management.
74. Can advance to management.
75. Limited.
76. To management.
77. Internal promotion.
78. Service Technician
79. Line technician--management.
81. Technician position.
82. Service Technicians.
83. Supervisor.
84. Mechanical position and supervisor position.
85. Unlimited opportunities.

Q 19. Would you explain the nature of the training?

02. People train each other.
03. Special training upon hiring and periodic week long upgrades.
04. On the job training is hour the personnel is trained almost exclusively.
05. A person is hired in as a "basic"--he then follows around an experienced person & learns "hands On" from him.
06. One day, Midas-sponsored classes called "updates".
07. On the job-everyday-"hands on".
08. Videos, meetings, books, tests, quizzes.
09. Work with line technicians (on the job training).
10. Working with top man (he pays the topman extra $ possibly sell shop in the future to that individual.
11. BOSCH (a supplier) offers training (company-Paid training).
12. Teamwork between mechanics- sharing ideas-helping each other out with problems- one of them might have more expertise with a certain area, etc.
13. Training films Pontiac testing excellence skills classes through Pontiac.
14. When new classes sponsored by different companies. we send employees to them.
15. On the job, manager trains them.
16. Ford holds classes.
17. Computer based training.
18. IPL computer + hands on training with technicians who are already at dealer.
19. Train off each other.
20. Go to Honda school and video training.
21. Works with existing technicians.
22. If classes available-boss will send employees.
23. Hands on Drive train differential systems.
24. Video tapes.
25. Videos + GM training.
26. Free classes through Avis inc.
27. Hands on.
28. Hands on.
29. GM training and +videos.
30. Hands on.
31. Hands on.

33. Vendors & parts stores present work shops and classes.
34. Hands on with experienced technician
36. Have own training group; train in all aspects-air conditioning, wheel chair lifts; engines, transmissions, electrical.
37. 90% training in house; Chrysler recommended schools where to go; library books; videos.
38. In house training.
39. For updating to auto company schools or universities 2 times/year send employees.
41. Send to factory for training.
42. GM senior people train employees.
43. Provided by Honda; senior personnel; listen to tapes.
44. Send to Chrysler Corporation training.
45. Training by senior personnel.
46. Senior personnel training.
47. In house by senior employees.
49. With existing technicians.
52. Hands on with technicians.
53. Tire and battery technicians will train entry level.
54. Classroom + hands on.
55. Hands on.
56. Supplier set up seminars.
57. Video tapes +GM training.
58. Work side by side with new hires.
60. With co-op students; take step-by-step.
61. Video tapes, seminars, hands on training.
62. Hands on training and training schools.
65. Hands on training.
66. Video training tapes and technician school.
67. Training schools.
69. We have hands on trains and training schools.
70. On the job oversee work, explain repairs.
71. Work with apprentices to give them experience and knowledge.
72. Senior people oversee/send to school.
73. Provided by Goodyear - have extensive training-management training technical training, new product training.
74. GM training Center, apprentice program.
75. Depends on individual needs-have sent employees to OCC for Algebra.
76. Have mentor program. Experienced staff mentor works with less experienced employees.
77. Working with other technicians + schooling.
79. Corporation's technical center-train them in specified company needs.
80. Send to a training school, seminars, video tape and hands on training.
81. Hands on training and seminars.
82. Hands on training with certified technicians.
83. Technical school, hands on training.
84. Hands on training.
85. Training schools and hands on training.

Q21. Would your company be in sponsoring co-op experiences for OCC students in the automotive servicing program at OCC?

02. Have to contact the owner, Rom Cooper, 585-6484.
03. Need to ask owner.(paid)
need to ask the owner.(unpaid)
04. Talk to owner.(paid)
Talk to the owner.(unpaid)
05. Owner's decision.(paid).
Owner's decision(unpaid).

06. Main office decision.(paid).
Main office decision.(unpaid)
07. Main office decision.(paid).
Main office decision.(unpaid).
08. Was involved in a GM training program called ASAP--not interested because 99% of people who were trained through this program did not stay.(both for paid and unpaid).
09. In the spring, might be interested, but not sure if paid or unpaid.
12. The owner has to make this decision.(paid and unpaid).
19. Does not have authority to OK something like that the owner does.
21. If co-op program met needs of our shop.
22. Boss's decision to do this if he was interested.(paid and unpaid).
24. Review with upper management.
27. Would like hear about program.(both paid unpaid)
35. Would be interesting-can contact Donna Jackson with details of the program.
36. Need to contact: Chris Wanton 833-7670.,Director Department of maintenance, service.
37. Chrysler Co-ops -needs to contact Beanie Baker at Highland Park.
38. Students do not want to travel into the city of Detroit.
39. Would consider (part time basis) send information.
41. Possibly send literature explaining the program.
42. Possibly would have to look at the program.
44. Have to contact Fredliene Bruce, Service manager.
45. Possibly have to see the program.
46. Owner would have to be contacted and make decision.
47. Would have to look at program; depending on whether they are busy or not.
53. Manager interested-doesn't know (already work with a HS co-op program).
56. Definitely interested. Need installers-batteries, service-advisors,tire changes equipment maintenance etc.
59. Not large enough yet-still new Company.
60. Had bad experience with highschool. co-op (don't show up) poor work habits.
63. Not at this time send information may be interested in future.
70. Depends on ability --future economy.
71. Would look at OCC's program--currently doing it with Macomb(ASEP student to a paid Co-op.)
73. Should contact: Rom Sutfin 423 5634. Good year District Office tell him Barry Ducharme told OCC to contact Goodyear.
74. If OCC has an ASEP program.

Q 22. OCC offers specially designed training and education programs for individuals and groups. Does your company have training or education needs that might be met in this way?

05. Would have to know the specifies of these programs.
06. "Midas covers it pretty well"
07. Have to ask main office.
10. Would be interested in more information.
11. In understanding mechanical theory Geometry (as applied to auto repair)-Physics (as applied to auto repair), Chemistry (solvents etc., used in repair of autos.
12. All mechanics are "master", not sure if need further training from OCC.
43. No, Honda provides training.
44. No, Chrysler provides training.
46. No, manufacturers supply most of their training.
47. Uncertain. Would like to see some information on programs offered.
56. Feels its important to always keep current. Would have to go through company first.
63. All training through Chrysler.
75. Please send information to Karen De Cuir- Di Nicola.

Q 24. Are there any comments you would like to make at this time?

08. Yes, one of his children graduated from OCC (in communications not automotive)and he was not impressed with OCC.
12. It's a mixture of being "on time, caring about your job + other people hands-on, team work, book knowledge & knowing that Quality is what's it all about & that this is a "Service-geared" field.
16. Stress importance for need for technicians and for automotive students to get the best education they can.
24. GM Asset program--biggest problem is pay rate-graduation doesn't mean top dollar + employees become disgruntled.
26. Most entry label are not able to do Quality work.
37. We as a Corporation think that schools need to recruit more females and minorities (from high school, 11-12 grades a shop classes or technical classes) to enroll in auto tech classes."
53. It's a very open field right now MCI + other technical schools aren't keeping up with trends & new technologies.
54. Company is now automotive related.
64. Currently using high school co-op students (Briarhoff) would be very interested in OCC students.
66. OCC should provide ASEP programs.
70. Didn't know OCC offered program. Receives flyers + information letters from the State that mention Macomb's programs -these letters never mention OCC.
77. Mike Dooley may be able to do #23.

APPENDIX I

Enrollment in Automotive Servicing Programs

in the State of Michigan

Enrollment and Awards for
Automotive Servicing Programs in the State of Michigan

Automotive Technology (150803)
Automotive Mechanics (470604)

Source: Michigan Department of Education
Michigan Community and Junior Colleges
Enrollment Data Profile 1988-89/1989-90

Enrollment, July 1988 through June 1989

	CIP 150803	CIP 470604
Total Men	851	1391
Percent Men	88.37	91.82
Total Women	56	75
Percent Women	5.82	4.95
Unknown Gender	56	49
Total Enrollment	963	1515
Minority Enrollment		
American Indian	13	N/A
Black	113	N/A
Asian	12	N/A
Hispanic	35	N/A
Total Minority	173	N/A
Percent Minority	17.95	N/A

Enrollment, July 1989 through July 1990

Total Men	821	1346
Percent Men	93.61	94.92
Total Women	56	72
Percent Women	6.39	5.08
Total Enrollment	877	1418
Minority Enrollment		
American Indian	12	21
Black	49	111
Asian	11	13
Hispanic	27	22
Total Minority	99	167
Percent Minority	11.14	11.78

Awards, July 1988 through June 1989

	CIP 150803	CIP 470604
Total Men	62	145
Percent Men	95.38	97.32
Total Women	3	4
Percent Women	4.62	2.68
Minority Awards		
Black	N/A	11
American Indian	N/A	1
Asian	N/A	3
Hispanic	N/A	1
Total Minority	N/A	16
Total Awards	65	149

Awards, July 1989 through June 1990

Total Men	51	165
Percent Men	92.73	93.75
Total Women	4	11
Percent Women	7.27	6.25
Minority Awards		
Black	1	5
American Indian	1	0
Asian	0	2
Hispanic	0	5
Total Minority	2	12
Percent Minority	3.64	6.82
Total Awards	55	176

APPENDIX J

Narrative Responses from

Student Survey

Student Narratives

Q 1. What were your reasons for taking automotive servicing courses at OCC? What was the single most important reason?

01. For a raise or promotion.
02. For my own personal development.
04. Have a strong interest in automotive technology, never had the chance to follow it though before.
05. To get certified and become a manager within 5 years.
06. Mostly personal-would like to restore old vehicles eventually.
08. Was in apprentice program at GM-required.
09. Want to become certified.
10. Originally personal-but now has apprenticeship with GM.
12. Required by the employer.
13. Personal development.
14. Dissatisfied with jobs he has held. Decided to look into becoming a mechanic.
15. Took transmission class for personal development.
17. With skills learned have better chance of advancement in present job.
18. To become more marketable, keep updated.
23. Likes to work on cars.
24. Personal development.
25. Employer's requirement.
27. For personal development.
28. To increase future earning potential.
30. Likes working on cars.
31. Employer's requirements.
34. To obtain a degree.
36. Increase knowledge for own car servicing.
37. After 23 years at GM, will retire at 47, wants to keep updated- would like to work part time.
38. Obtain degree.
39. I really liked cars as a hobby.
40. To gain more knowledge to help me improve my skills to function better at work.
41. Apprenticeship.
44. Work on own vehicles.
45. Would like to eventually get certified-part time 1 or 2 classes per semester.
49. To open own business.
50. Wanted to explore new area.
53. Sent by GM Truck Coach.
54. In GM Phase II Program.
55. To find a hob doing something I like.
57. To obtain knowledge of cars.
61. Earn a degree advance higher in present job.
62. Something to fall back on if other employment opportunities don't work out.
63. Enhance knowledge keep up with changes.
64. Get certified, eventually open brake shop.
69. Requirement of the employer.
72. Personal development.
73. Personal enrichment.
74. To get certified.
75. For a raise and promotion.
80. Enjoy as a hobby.
82. Maintain personal vehicle.
83. Job requirement.
84. Personal development.

87. State certified.
88. Set up a business-automotive related.
89. Keep up with new technology-increase chances of future employment.

Q 3. What is your current occupation?

. GM mill right.
02. Book keeper.
03. Electronics.
04. Material handler at GM-laid off an in the job bank.
05. Auto painter.
06. Level II Inspector (Nuclear Steel).
07. Orderly St. Joseph Mercy Hospital.
08. Mechanic at GM.
09. Part time student (unemployed, lives with parents.)
10. Vehicle builder.
11. Stock.
12. Experimental vehicle builder at GM.
13. Sales.
14. Waiter.
15. Pipefitter.
16. GM Corp Inspector.
17. Repairman on Assembly line.
18. Mechanic.
19. Student Assistant.
20. Grounds keeper, Oakland University.
21. Auto parts sales.
22. Sales man.
24. Shop machinist mechanic.
25. GM Corp. Apprentice.
26. GM classified assembler.
27. Assembler/repairman.
28. Supervisor East town beer distributor
29. Driver GM.
30. Machinist.
31. Auto mechanic.
32. GM Corp. Electronics.
33. Assembler for Ford automotive.
34. General laborer.
35. Building maintenance.
36. Truck repairman.
37. Mechanic GM.
38. Mechanic.
40. Technician.
41. Experimental auto vehicle builder-GM.
42. Stock keeper.
43. GM Corp. Fork Truck driver.
44. Currently laid off (stock keeper at GM>)
45. UPS loader.
46. Technical writer.
47. GM Corp line assembler.
49. Air driver UPS.
50. Pharmacy assistant.
51. Spray painter.
52. Final Inspector, GM truck and bus.

54. Assembly GM.
55. State farm agent (IND).
57. Apprentice for GM corporation.
58. Press operator-unique fabrication Corp.
59. Retail sales.
60. Car dealership sales.
61. GM hourly worker.
62. Student.
63. Laid off from GM stockkeeper.
64. Kroger -- clerk.
65. GM laid off-assembler.
66. Construction worker.
67. Machine shop laborer.
68. EDS GM road side program.
Note:EDS has an experimental program for "GM roadside assistance program", hires automotive repair students part time to help with calls for over the phone repairs warranty calls. Most full time are degreed W/ technical backgrounds.
69. Experimental vehicle builder GM.
71. GM Corp mechanic.
72. Ford Automotive Corp.
73. Mechanic (laid Off).
75. GM Corp. Master mechanic.
76. Audio- visual technician at OCC.
77. Electrician, electrical repair, GM Truck.
78. GM Corp Line builder.
79. Store Stack Clerk.
80. Tool setter.
81. Ford automotive assembler.
83. Apprentice for GM Corp.
84. Mechanic for GM Corp.
85. Auto line builder.
89. Assembler-now on leave from GM (truck and bus.)
90. Pipe fitter (GM Pontiac Div.)
91. Electrical Engineer.
92. GM fluid analyst.
93. Farmer Jack-Deli worker.
94. Student.

Q 5. Has the course work you have taken in automotive servicing at OCC been helpful to you in your current employment?

01. Yes. The mechanical parts of the course are helpful.
05. Yes. In painting position, occasionally do some mechanical work.
06. Training on some of measurement equipment is helpful in present job.
08. Provided all basic knowledge needed for jog. (gives good foundation in fundamentals).
10. Just began 2-3 weeks ago-not much yet.
12. Updated knowledge.
17. Yes. Increased general + technical knowledge.
18. Not in current employment.
20. Do work on lawn moving tools engines.
21. I have learned about different automotive parts.
24. The electrical parts of the course has been very helpful for my job.
25. Yes. In every way to do my job.
27. Yes. That's my job- that's everything I do.

31. Yes. I use the skills every day order to work as a mechanic.
37. Learned a lot about diagnostic codes.
38. Updating on new equipment.
40. Yes. Just makes you more familiar with the whole car in general.
41. Gives more detailed instruction than what would have been given at work. Learning more theory.
46. Yes. Giving technical background.
52. Yes. Need to have knowledge of all automotive phases to check. Truck building and assemble.
54. Gives more skills, more knowledge.
57. Yes. Day to day in order to perform my job.
61. Refreshed my skills.
69. To keep current.
77. Yes. Uses the knowledge of electricity-repair wrecked trucks when trucks are wrecked the electrical system is damaged also uses knowledge of painting and bump classes.
83. Yes. I use the skills to perform my job.
84. Yes. Some of the skills have helped me do my job.

Q 6. How do you plan to use the knowledge and skills gained in your automotive servicing courses at OCC, in the future?

01. At my current job.
02. Certified mechanic.
03. For a better job and pay.
04. He intends to take a Bachelor's degree if possible it depends on the GM set up.
05. To advance in current job.
06. Plan to restore old vehicles.
07. To get a job in automotive field.
08. Only for work at GM as mechanic or for personal vehicles.
09. Would like to work full time as a mechanic.
10. Advance in present job.
11. A new career.
12. Working side job as mechanic.
13. A new career using my skills.
14. Become mechanic.
15. Personal pleasure(may be profit) restoring old cars.
16. As a hobby after retirement.
17. In better paying job with current employer.
18. Having more diversified knowledge can improve job (change employer).
19. For a better job and pay.
20. Own personal use, home, some at work.
22. Open my own business.
23. Not sure.
24. To become a certified Master mechanic.
25. On my job.
26. It is related to climate control.
27. Able to use it at work and at home and help a friend by working in his auto repair business.
28. Would like to work in auto servicing in future. Don't have experience required now to get job.
29. Use on personal vehicles.
30. Open my own business.
31. May be opening my own business.
32. For my personal use.
33. To become a certified mechanic.
34. To become a mechanic.
35. Open own business.
36. Mostly personal use.

37. Would like to keep working in field part time after retirement from GM.
38. Opening own shop and building street roads.
39. Gas station mechanic.
40. I think I'm using it right now at work.
41. In job.
42. For a better job and pay.
43. For a new career after retiring.
44. Own use or if indefinitely laid off from GM will get job related to courses.
45. Would like to work as mechanic full time.
46. Use in job as a writer.
47. To maintain my current position.
48. Trying to get a hob in automotive servicing- hard for a woman.
49. To open own shop.
50. Care of personal vehicle.
51. To become a master mechanic in brakes.
52. Preparing to retire from one career (29 year with GM) and to begin another.
53. After taking ! year off to play golf and sail in Florida plan to apply for job with OCC to teach in the OCC in the Automotive Servicing program.
54. Maintain personal auto.
55. Finding a job to use my skills.
56. To find a job with good pay.
57. As a apprentice.
58. To work on own vehicles.
59. My own use.
60. For my personal use.
61. Hope to get degree; advance higher at GM.
62. Mostly personal use but like security of knowing this skill to fall back on.
63. Possibly open own shop or work on the side for extra income.
64. Would like to eventually become certified-dream is to have own brake shop.
65. If GM places him in repair area when recalled or lay off, will know-how to do work and how to use equipment.
66. Auto mechanic.
67. To get a job in auto servicing.
68. job.
69. Already had auto tech degree. Not going to change future much.
70. Maintain personal vehicles expand knowledge.
71. For my personal use.
72. For my personal use.
73. Buy and fix cars for resale.
74. To work in the automotive field.
75. For my personal use.
76. When going to get personal vehicle repaired, understand what repairmen are talking about and have an idea about the charges being made.
77. If GM classes his department he will have some thing to fall back on.
78. For a better job and pay at my current job.
79. To receive a better job.
80. Mostly personal-working on own vehicle.
81. For a new career when I retire from Ford Automotive.
82. Repair personal vehicle.
83. On my job.
85. I plan to use the skills on my job.
86. I would like to open my own business repairing and rebuilding car.
87. Career.
88. Set up own business.
89. Would like to work part time doing transmission repair.