Automotive Service Technology

APRC 1996-1997

section 1 of 4

FERRIS STATE UNIVERSITY

COLLEGE OF TECHNOLOGY

TRANSPORTATION AND ELECTRONIC DEPARTMENT

Program Review

of the

A.S.S. in Automotive Service Technology

1996-1997

February 1, 1997

FERRIS STATE UNIVERSITY

COLLEGE OF TECHNOLOGY

TRANSPORTATION AND ELECTRONIC DEPARTMENT

Program Review

of the

A.S.S. in Automotive Service Technology

1996-1997

Program Review Panel

Gregory W. Key (chair) Professor T&E Department
Jack Richard's Assistant Dean/ Department Head T&E Department
Charles Bonning Associate Professor T&E Department
Ron Tuuri Associate Professor T&E Department
Andrew Richard Anderson Associate Professor Landuages & Literature
Donald Walcheski Advisory Committee

February 1, 1997

INDEX

From the Automotive Service Program the Department of Automotive and Heavy Equipment was developed. The department consists of five programs: Auto Body, Auto Service, Heavy Equipment Service, Heavy Equipment Service Engineering and Auto and Heavy Equipment Management. The Automotive and Heavy Equipment Management BS degree was the first BS degree in the College of Technology. To this day it graduates one of the highest numbers of BS graduates in the College of Technology. The Automotive Service program supplies the largest number of students to this BS program. After the restructuring in 1996, the Automotive and Heavy Equipment Department was combined with the Electronics Department to form the Transportation and Electronics Department. The Transportation and Electronics Department is one of the three departments that make up the entire College of Technology. The Auto Service Program has the largest number of students and the largest number of faculty in the department. Therefore, the Automotive Service Program is a very significant part of the Transportation and Electronics Department which constitutes one-third of the College of Technology. As a result, the College of Technology is now the largest college in the university.

To help compete with other schools, Ferris' Automotive Service Program began making ties with the major automotive manufacturers. In 1988 the Automotive Service Program at FSU along with General Motors started a GM-ASEP program. We receive approximately $200,000 per year in vehicle donations alone, plus training material, equipment, manuals, engines, tools and faculty update training. After we were able to start a new group of students every year in GM-ASEP, we started working with Ford Motor Company on a Ford-ASSET program.

In 1991 we started the first group of students in the ASSET program. Ford donates all training material and all of their specialty tools; most of which no school would be able to afford to purchase since they change with every model and year, and thus their life span is sometimes only a year. In the summer of 1996 we started the Chrysler CAP program. Since we did not receive official notice from Chrysler until late summer, we were not able to advertise the program very effectively for a fall start up date. Because of the late date most seniors had all ready enrolled in a college. Even with such a short notice we were able to start a small group in the fall of 1996. With the start of the next cycle of the Chrysler CAP program we will be able to start a full group of students with ease.

Our department budget in previous years was $80,000. That amount has been lowered over the past few years to around $50,000. However, the cost of all materials and equipment in the department has increased extensively in the past ten years. Around $10,000 to $12,000 of the $50,000 goes to the Automotive Service Program. We did receive $38,000 this year from vocational education funds; however, it is anticipated that these funds will be lost in the near future. Without the voc ed funds we do not receive a sufficient amount of money in the College of Technology department budget. We presently maintain approximately 60 new donated vehicles for educational purposes which we rotate every three to five years. The value of the 60 vehicles is approximately 1.5 million dollars.

With our donations of vehicles and other equipment and training from industry we receive around 2 to 2.5 million dollars of donations every three to five years on a continuing

rotational basis. As can be seen, the quality of the Automotive Service Program is financially linked to industry. 70% to 90% of the money it takes to run the Automotive Service Program comes from industry. With the high probability of the vocational funds being eliminated in the near future, the need for a strong tie to industry will be essential for any program at Ferris to be competitive. With the start of the Chrysler CAP program this year we have increased our financial support from another corporation.

Students receive some books free from industry which are the latest books available; thus lowering the cost of education for the students. Furthermore, because our faculty continue to go to corporate training, the companies have allowed us to imbed their training courses into our Automotive Service Program. This gives the students about $35,000 worth of training courses when they graduate. They get to take their training history with them to the dealership which means that the dealership doesn't have to pay $35,000 for them to go to the training center. This, along with the high quality education they receive at Ferris, makes our students in very high demand.

Placement in the Automotive Service area is 100%. Some choose to go on to our Automotive and Heavy Equipment Management program and pursue a BS degree. In our three corporate automotive service options, we help arrange co-op dealership sponsors for our students. Because of our industry ties 75% of our students will be placed in jobs as a result of starting our auto service program.

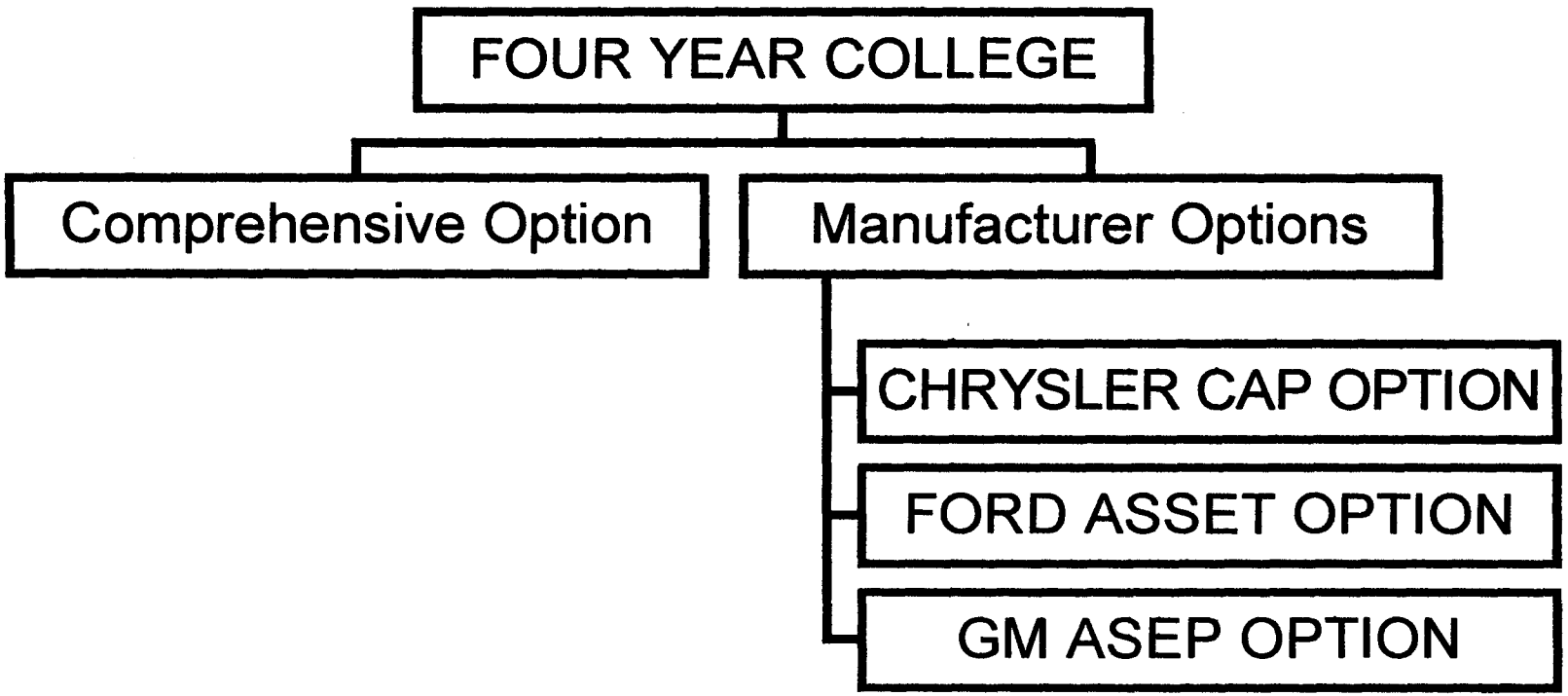
Approximately 75% of our students are being evaluated by employers over a two year period while they attend Ferris. This is the best outside assessment available to any

program. If an employer had to continually replace a Ferris graduate, then we would lose our employer base and have a very low placement rate. The corporate programs allow for around 50 to 80 different employers every two years to evaluate Ferris' Automotive Service Program. As a result, the employers are willing to hire co-op students when they start the Automotive Service Program with just the intent to finish the program. This speaks to the quality and reputation of the Automotive Service Program at Ferris State University.

In the near future we anticipate losing two automotive service faculty to retirement and their positions will need to be filled at that time. With the enrollment increase expected as a result of the Chrysler CAP Program in the next two years and with continual recruiting, the program should remain the largest program in the department. All indications point to a slow steady growth in the Automotive Service Program in the next few years.

history.pg4

AUTOMOTIVE SERVICE PROGRAM



Automotive Youth Educational Systems

COLLEGE

Four- year college

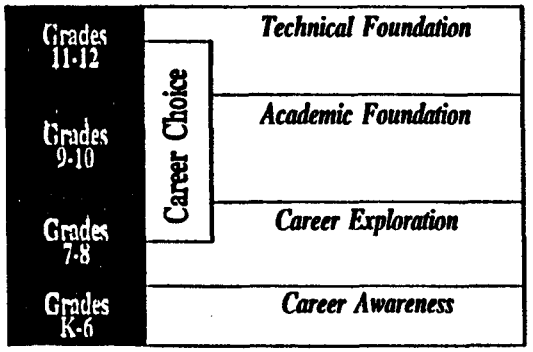
Chrysler CAP | Ford ASSET | GM ASEP

AUTOMOTIVE DEALERSHIP

•Manufacturer specialized advanced training (2-year degree)

HIGH SCHOOL

Graduates



AUTOMOTIVE Youth Educational Systems YES

•Basic auto. tech. training
•Academic training
•Auto. awareness (image)

AUTOMOTIVE Youth Educational Systems YES

SECTION 2
SUMMARY: ALUMNI SURVEY OF GRADUATES

Introduction

This section of the Program Review Report summarizes the results of the AST graduate survey. The review committee distributed 300 graduate surveys and received 57 responses for a 19% return. The information indicates that AST Program graduates are finding good, well-paying jobs in the automotive service industry; are being promoted to management positions; are attaining necessary ASE certifications; and are extremely satisfied with the combination of classroom/service floor/ co-op instruction our program offered them. These results indicate that the AST Program is doing its job effectively--providing Michigan strong, highly-talented, and well-trained automotive service technicians and managers.

Job Placement/Positions/Salaries (Questions 1-6)

The survey indicates that nearly 80% (45/57) of the program's graduates have found positions as service technicians (27), service managers (9), or engineers (9). The average length of employment is 2.98 years, and over 90% (51/57) of these jobs are in Michigan. Many of our graduates are working at the corporate level with companies like Borg-Warner, Buick Division GMC, Cummins Diesel, EDS, Eaton, Ford, and Oldsmobile Division GMC. More impressively, over 96% (46/50) of the respondents had no difficulty finding jobs after graduation. Our pre-professional programs with Ford and General Motors, co-op and internship opportunities, and solid reputation in the automotive service industry were key factors cited in many of the responses: "there were numerous job offers while I was still in school" and "a degree from Ferris speaks for itself" were typical.

The average starting salary for AST graduates was $30,127.50. The present salary average reported is $32,785.85. The state average salary for a auto mechanic is between $21,096 and $33,252. The national average salary is $29,305. According to the MOIS system the skilled technician makes two to three times the inexperienced trainees. However, it should be noted that Ferris State University auto service graduates start higher than the state and national averages for all technicians. (See labor market analysis from MOIS).

Program Education/Certification (Questions 7 and 8)

When asked "which phase of your on-campus education (courses, service floor. or co-op was most valuable in preparing you for work," over 54% (31/57) of the respondents indicated that the combination of these three areas was vital to their employment success. The most typical comments cited the necessary blend of classroom theory, hands-on service floor experience, and customer relations skills during dealership co-ops. Of the courses cited, the automotive electronics courses were seen as the most important.

Nearly 65% (37/57) of the respondents were able to obtain ASE/Michigan certificates in all 8 areas. 14 of the 17 who have not been certified in all eight areas have either not yet taken all 8 tests, or have no need to do so for their current jobs. Only one cited poor instruction as the reason for failure in the certification process. These responses strongly suggest that the AST Program's current three-phase approach is effective in fully preparing its graduates for their careers

Effectiveness of AST Course Work (Question 9)

Nearly 72% (41/57) of the respondents rated their classroom preparation good to excellent and 20% (10/47) rated their classroom preparation as adequate. The criticism offered by the other 10% pointed to more work being needed on problem solving and customer relations skills. More often, the comments were highly positive: "my technical knowledge is strong and helped me get a job" and "it was excellent" were typical.

When asked about changes, the respondents' prevailing opinion was to keep the courses as up to date as possible; to offer more hands-on experience; to do more work with electrical and diesel technology; and to stress the differences between the classroom and the real world graduates encounter. Many of these changes are currently being studied as part of this review process.

Again, these responses indicate the classroom phase of the AST Program is highly successful.

Effectiveness of AST Service Floor Experience (Question 10)

32 responses were received in this category. 55% (18/32) of the respondents rated this phase of their training as good to excellent, and fewer than 15% (5/32) rated service floor as adequate. Several respondents pointed-out that they had not needed to take this phase.

Suggestions for change ranged from less concern about uniform requirements to the need for more instructors on the floor (to lessen the time needed for safety checks) and more realistic time frames for repairs. Several said the only "problem" was that they wanted even more time on the service floor.

The service floor phase of AST training seems to be effective, as newer vehicles are donated to the service floor.

Effectiveness of AST Co-op Experience (Question 11)

23 responses were received in this category--again, many students (6/23) did not need to complete this phase to obtain the degrees and jobs they sought. Nearly 65% (15/23) of the respondents rated their co-op experience as very good to excellent.

Nearly 44% (10/23) saw no need for changes in the co-op phase. The "real world" aspect of the co-op experience was cited as important.

This phase of the AST Program seems to be effective, given the various ways students have to gain this experience (ASEP and ASSET programs, for example).

Technological Equipment/Computers in the AST Program (Questions 12 and 13)

Over 66% (37/56) of the respondents said that the technological equipment used in their courses was up to date. Several commented that they found even newer equipment on the job, but that their experience with AST Program equipment had prepared them for this. Only 2/47 respondents answered no to this question.

60% (31/51) of the respondents said that the computers they used and the computer skills they developed during the AST Program were useful in their jobs. the major concerns were on keeping the programs current--especially campus-wide use of Windows, CD ROM manuals--and requiring computer courses for the two-year program. Only 3/47 answered no to this question.

The technological/computer equipment used in the AST Program is useful to its graduates' careers, but will need to keep-up with the new programs developed in the automotive service field.

Return to Ferris for a Bachelor's Degree (Question 14)

33 responses were received to the question "if you were to return to school for a Bachelor's degree, would you consider Ferris?" Nearly 76% (25/33) of the respondents answered yes to this question. This percentage would have been higher, but 8/33 respondents have already completed their Bachelor's degrees in AHM at Ferris. Several respondents commented that the only "problems" with pursuing a Bachelor's degree at Ferris right now would be travel and time away from already good jobs.

These responses reinforce once more the AST Program's ability to produce high-quality, highly-employable graduates. Once more, the large number of those who would consider a Ferris Bachelor's degree in AHM--or who already have earned one --suggests that the program educates as well as trains its students. The current combination of the theoretical and technological phases offered by the AST Program, and the professional and financial success of its graduates, prove this to be a strong, vital program now, and for the future of the university.

ALUMNI SURVEY OF GRADUATES

	Question 1. Where are you currently working?	Question 2. How long have you been employed there?
1.	Grand Oldsmobile	8 years
2.	Holland, Michigan	10 months
3.	Genzink Speed (self employed)	Since graduation
4.	AIS Construction Equipment , Lansing, MI	2 years
5.	GHI Automotive	4 years
6.	EDS in Troy	1 month
7.	Brian Banfield's Auto Center, Marshall, MI	4.5 years
8.	Mechanical Design & Engineering, Burton, MI	1 years 9 months
9.	Valvoline Instant Oil Change	4 years
10.	Urka Auto Center, Ludington, MI	2 years
11.	Orin B Hayes, Kalamazoo, MI	2 years
12.	EDS, Lansing, MI	2.5 years
13.	Frank Beck Chevrolet, Hillsdale, MI	5 years
14.	Oldsmobile Division, Lansing, MI	7 years
15.	Auto Tech, Pigeon, MI	1 year
16.	EDS/STG Service Readiness (GM) Lansing, MI	5 years
17.	Allied Signal Friction Materials, Troy, MI	1 year
18.	Active Industries, Elkton, MI	6 months
19.	U.S. Post Office, Lansing, MI	2 years
20.	Chevrolet Motor Division	5.5 years
21.	Eaton Corporation	6 years
22.	Buick Motor Division	11 years
23.	All Pro Transmission	1.5 years
24.	Auto Analyst	1.5 years
25.	Electronic Data Systems	2 years
26.	GM Service Technology Group	4 years
27.	Toyota Technical Center	5.5 years
28.	Buick Motor Division	6 years
29.	Cummins Engine Co., Columbus, IN	3 months
30.	EDS - GM Proving Grounds, Milford	4 years
31.	Ford Motor Company	3.5 years
32.	Tom Naguir's Chevrolet, Elkhart, IN	1.5 years
33.	Redmond Automotive	1.5 years
34.	Michigan CAT	8 years
35.	Borg Warner Automotive	11 years
36.	Cummins Engine Company Inc.	1.3 years
37.	Betten Toyota, Grand Rapids, MI	6 months
38.	Chrysler Headquarters (Tech Center)	1.5 years
39.	Pewamo Westphalia High School	6 months
40.	Gettels Auto Mall	4 years
41.	Trent Olds-Cadillac-Buick-GMC - North Carolina	6 months
42.	Annie Rae Chevrolet, DeWitt, MI	1.5 months
43.	Klotz Auto Parts, Hart, MI	9 months
44.	Gradall Company, New Philadelphia, OH	2.5 months
45.	Gateway Ford, Sturgis, MI	1.5 years
46.	RC Engineering-Milford Proving Grounds-GM	7 months
47.	City of Flushing DPW	One year
48.	EDS/Chevrolet	2.5 years

49.	Kent County Sheriff Dept., Fleet Services	49.	5 years, 8 months
50.	Prairie View Farms, Granger, Indiana	50.	6 months
51.	GM Buick Motor Division	51.	3.5 years
52.	General Motors Proving Grounds	52.	9 months
53.	John Colone Chrysler	53.	2 years
54.	Timmer Cherolet	54.	2.5 years
55.	Powertrain Engineering, Flint	55.	1.5 years
56.	Southeast Toyota Distributors, Inc., Florida	56.	3.5 years
57.	Toyota Arizona Proving Grounds	57.	5 years

Question 3. What is your present position/job title?

1. Auto Tech
2. " "
3. Owner
4. New Parts & Small Engine Sales
5. Service Manager
6. White Mail Specialist answering letters & phone calls.
7. Technician
8. Fleet Manager/Data Analysis
9. Manager
10. Technician
11. Auto Tech
12. Service Readiness Technician
13. Service Technician
14 Technical Assistance Engineer
15. Service Technician
16. Service Readiness Engineer
17. Engineering Associate
18. Inspector
19. Mechanic
20. Chevrolet Case Manager
21. Mechanical and Electronics Technician
22. District Service Manager
23. Auto Technician (R&R)
24. Lead Technician
25. Service Readiness Engineer
26. Platform Technician
27. Senior Technician
28. District Service Manager
29. Warranty Admin/Rapid Serv Engineer
30. Instrumentation Tech
31. Experimental Mechanic A
32. Auto Technician
33. Aftermarket Accessories
34. Sales rep
35. Associate Engineer
36. Rapidserv Engineer/Warranty Administrator
37. Assistant Service Manager
38. Mechanic (Salaried union)
39. Transportation Supervisor
40. Technician
41. Driveability Automotive Technician
42. Auto Technician
43. Parts Counterman
44. Regional Parts Marketing Rep
45. Technician
46. Technician
47. Entry level general laborer
48. Product Investigations Specialist
49. Fleet Services Mechanic
50. Farmer
51. District Service Manager
52. Auto Transmission Technician
53. Service Technician
54. Technician
55. Experimental Assembler
56. Field Technical Specialist
57. Senior Technician

Question 4. What was your starting salary?

1. $4.50/hour
2. --
3. --
4. $28,400
5. $21,000
6. High $20's
7. $23,500
8. $20,000
9. $20,000
10. $6.00 per hour
11. $24,000
12. $26,400
13. $5.00 per hour
14. $28,000
15. $7.00 per hour
16. $27,500
17. --
18. $13.00/hour
19. $25,000
20. $29,000
21. $22,000
23. $10.00 per hour
24. $38,000
25. $26,000
26. $24,000
27. $32,000
28. $28,800
29. $35,500
30. $26,000
31. $28,000
32. $15.50 flat rate per hour
33. $6.00 per hour
34. $25,000
35. $1,420 per month
36. $37,200
37. $48,000
38. $29,000
39. $21,000
40. $4.25 per hour
41. $13.00 per flat rate hour
42. $12.00 per hour
43. $6.00 per hour
44. $32,000
45. $12.00 per hour
46. $15.50 per hour
47. $27,768 per year
48. $28,500
49. $9.25 per hour
50. $10.00 per hour
51. $30,000
52. $11 per hour
53. $20,000

Question 5. What is your present salary?

1. $50,000 per year plus (yearly commission)
2. --
3. $50 per week....starting own business.
4. $32,500
5. $40,000
6. High $20's
7. $32,000
8. $25,000
9. $28,000
10. $16.50 per hour with commission
11. $30,000
12. $29,200
13. $12.50/hour
14. $38,700
15. $8.00 per hour
16. $37,400
17. $35,000
18. $14.31/hour
19. $30,000
20. $42,000
21. $35,000
23. $11.00 per hour
24. $50,000
25. $32,000
26. $24,000
27. $50,000
28. $43,000
29. $35,500
30. $33,000
31. $38,000
32. $16.25 flat rate per hour
33. $10.00 per hour
34. $100,000
35. $3,950 per month
36. $38,300
37. $51,000
38. $38,000
39. $22,500
40. $14.00 per flat rate hour
41. $13.00 per flat rate hour
42. $13.00 per hour
43. $7.00 per hour
44. $32,000
45. $12.80 per hour
46. $15.50 per hour
47. $28,454 per year
48. $31,000
49. $13.12 per hour
50. $11.00 per hour
51. $40,000
52. $13.00 per hour
53. $27,000

54.	$6.00 per hour	54.	$13.00 per hour/commission
55.	--	55.	--
56.	$25,000	56.	$33,000
57.	$24,000	57.	$38,000

Question 6. Was it difficult to find a job when you graduated?

Responses	
Yes	No
5	51

Explain:

1. ASEP program
7. My brother was in the process of opening his new business when I was in my last quarter of school so when I graduated there was a position waiting for me.
8. Moved to Seattle, WA. The economy was better there than Michigan and jobs more plentiful.
10. Started with dealership that sponsored me during ASEP program.
11. Everyone needs good techs but no one wants to pay a tech what he is worth.
12. Found a job at Goodyear Service Center.
13. Worked for co-op in ASEP program.
14. I began working with Oldsmobile in 1989 as a co-op student and was hired upon graduation.
16. Had position confirmed before graduation.
17. Qualified technicians are in high demand.
18. Auto dealerships don't pay enough and don't appreciate an Associate's degree.
20. Had a job with Chevrolet CAC prior to graduating from Ferris.
21. Was informed of the open position by the Dept. Head in the Heavy Equipment program.
23. Entered automotive field in college, had no previous experience.
24. There is a high demand for skilled technicians and the demand is growing. Also, a degree from Ferris speaks for itself in the automotive field. The name "Ferris" has a reputation for producing skilled technicians. However, once your foot is in the door, you are expected to provide your skills to your employer.
27. There were numerous job offers while I was still in school.
29. I have AAS in Auto Service and B.S. in AHM from Ferris.
30. Summer intern with EDS, hired after internship was completed.
33. Hired at the first place I applied.
36. I had a very strong technical background as a service technician, plus a B.S. and A.A.S. degree from FSU. I did very well in both Auto Service and AHM and graduated with honors. Finding a job was fairly easy!
37. After graduation I had a call from the business I had applied at previous to graduation.
39. Only because I could not move.
40. Through the ASEP program they hired me when I graduated.
41. I got information for the job from the Placement Bulletin. I called the Service Director and the dealership paid for me to come down here to look at the area, and then paid for my move here.
44. Worked for Olds Customer Assistance for two years including intern. Rob Ferris, FSU alumni introduced me to currrent position with Gradell.
45. Graduated Dec. 93. Started job at Ford dealer in Kalkaska rebuilding auto tranx and drive line work. Worked approximately one year, moved, got job in Sturgis after one interview.
46. I found a job before I graduated. It was with Crown Motors of Charlevoix. I worked there 4 years.
47. I worked in the summertime for the city while going to college and part time until last October when I was hired full time.
51. Bad time in auto industry

53. Note: I have an interview with the Chrysler Proving Grounds the week of 11/17. Starting salary $40,000. I sent out 9 resumes and received 4 phone calls for job interviews. Took 2 weeks after I got back from school to get my present job.
54. Hired full time by present employer.
57. I was hired before I finished school.

Question 7. Which phase of your on-campus education (courses, service floor, or co-op) was most valuable in preparing you for work?

1. Courses.
2. Courses: Electrical, Fuels Management, Driveability
3. Co-op/course combo
4. By all means. All courses, service floor and my internship was critical for preparing me for a career.
5. Service Floor.
6. Service Floor, Fuel Systems, Transmissions, Physical World, Brakes-Chassis and Automotive Electricity.
7. Courses and service floor.
8. Course work and service floor work were equally valuable.
9. Service Floor.
10. Courses.
11. Co-op prepared me the most for dealership experience. The courses and service floor gave me a good foundation and basic training.
12. Both service floor and courses (especially labs).
13. Co-op and shop work at Ferris.
14. Courses 30%, Service Floor 20% and Co-op 50%.
15. Service Floor.
16. Courses very necessary for theory, but service floor was very important for the real world aspect.
17. Are equally important.
18. Service Floor.
19. The co-op work experience was great. I worked in a GM dealership before and after I graduated from Ferris.
20. Courses
21. The service floor and the labs, the hands-on experience was excellent.
22. Service Floor and Co-op.
23. All two years in my case.
24. Service floor was an excellent basis for "real" shop ethics and procedures but means very little without he knowledge gained in the courses.
25. Courses - theory.
26. Service floor (on hands experience).
27. Courses.
28. Service Floor
29. Electrical/Electronics
30. All auto tech and AHM.
31. Courses, service floor.
32. Service floor.
33. Service Floor.
34. Service floor was very beneficial...real problems to solve.
35. Courses.
36. Service floor, all electrical classes (people have the most trouble with electrical and driveability problems). My AHM classes were also very helpful.
37. Co-op.
38. All of my automotive and electrical/electronic classes greatly helped my ability to perform.

39. Co-op.
40. Co-op.
41. I found that the courses provided me with a lot of valuable information, while the service floor helped with my mechanical skills.
42. Lab.
43. All were equally important. Parts work requires a lot of knowledge in all makes and models, foreign and domestic.
44. Co-op, service floor and courses.
45. Service floor.
46. A combination of courses and service floor. Learning the basics and then being able to apply them in a job related area such as the service floor helped tremendously.
47. The courses, because I use what I learned from time to time when they need me to work on city vehicles (police, fire, DPW).
48. Courses and Service Floor.
49. I believe courses and co-op were equally important.
50. Internship was the biggest of them all.
51. Courses gave you a good understanding of theory.
52. Co-op through the GM dealer.
53. Service Floor.
54. Co-op was the most valuable phase. It gives you real life experience at work and problem solving.
55. The educational courses and service floor were equally helpful in preparation for work. Although more service floor time would be helpful
56. Courses.
57. Mostly the automotive theory that was taught in the classroom.

Question 8. Based upon your course work at Ferris, were you able to obtain ASE/Michigan certification in all 8 areas?

Responses	
Yes	No
37	20

If not please explain the area of concern.

3. Missed performance by one.
4. I am certified in areas pertinent to my career.
5. Didn't need to take for position.
6. I did not take the test. I think it should be pushed more than it was.
8. I only applied for one ASE certification and passed and obtained the one certification.
10. Have only taken 7 tests thus far, but passed all of them.
14. I have only now begun taking the tests and am currently certified in Brakes & Auto Trans.
18. Did not take ASE tests because I got a different job.
20. Did not need certification for job...did not take tests.
21. Did not need to obtain ASE certification.
26. Heating and air.
27. The two areas that I failed the first time, I felt were due to poor instructors in those courses.
36. I did not test in all 8 areas because I knew I was going to get my B.S. and did not want to be a service tech for life. I was only state certified in areas I worked on (engines, driveability, brakes and front end).
37. Did not need due to position obtained.
40. Needed more diesel training for pick-ups.
44. Did not take all tests. Only took 4 and passed two.
45. All but A/C and Engine Performance, have done virtually no A/C work and only do light driveability work.
46. I am currently Master certified for both ASE and Michigan. I also am ASE certilfied in Advanced Engine Performance.

47. I could have gotten all the certifications but because I did not need them I didn't.
50. Never applied, I worked mostly in Indiana when I was a Tech.
52. I still have two more tests to take.
53. I have only 4 certifications. Haven't taken any lately. Not many employers ask for ASE.
56. A/C lacked details on current systems.

Question 9. How effective was your course work in preparing you for work?

1. Fairly well.
2. OK, not really close to real world.
3. Effective
4. Quite effective
6. More time should be spent on customer relations.
7. Very helpful, but I feel you can't beat hands-on experience.
8. Course work was adequate.
9. Fair
10. Quite effective considering variations in dealership practices.
11. Good basic training.
12. Very good.
13. Good.
14. I refer regularly to my textbooks for my current job but went through AHM and that program was perfectly designed for my previous job as District Manager of Service.
15. If you want to learn, the information was available.
16. Provides a very good theory base to build upon.
17. Very important. Should expose students to more automotive opportunities, not just working in a service garage.
18. It was about as effective as it can get.
19. Worked out okay.
20. Nothing prepares you like practical experience.
21. It was excellent in giving me a basic understanding of mechanics and electronics.
22. Very, although a little old.
23. Very effective, gave me the knowledge to get my foot in the door, especially in this field.
24. Very effective, however, much is to be learned after graduation.
25. Highly effective.
26. Somewhat effective.
27. Very helpful.
28. Effective
29. Highly effective
30. Very, my technical knowledge is strong and helped get a job in a field where technical people are uncommon.
31. Very effective.
32. Great on the basics.
33. Very effective.
35. I was able to be hired as a Technician and with additional schooling and experience progress to an Engineer.
36. Very good.
37. Moderate.
38. I could not have passed them without it.
39. Very.
40. It was great.
41. Very effective.
42. It was effective but needed more diagnosis and hands on problem solving.
44. Good

45. Understanding electrical systems and devices and how they work is helpful in diagnosis but many times in actual shop conditions, techs are sometimes discouraged from doing extensive in depth diagnosis in exchange for parts swapping from known good. This is discouraging from truly understanding some problems.
46. It was fairly effective.
47. For the job I have, it helped with relating to others.
48. Very effective.
49. Very effective.
50. Some classes alot, others litte.
51. Very good.
52. Very effective.
53. Got the basics.
54. Gave basic knowledge.
55. It was good for theory but should spend more time on the latest technology.
56. Very effective, gave good foundation.
57. **Mostly the automotive theory that was taught in the classroom.**

Should any changes be made?

2. Yes, don't talk only about how things are supposed to work, talk about how to fix and diagnose things when they are broken and what problems will be experienced with these broken parts.
3. Bring Engines Class up to date and more like real world.
4. Spend more time on Diesel technology and fundamentals.
7. Not many except when I was in school in 91-92 our fuel systems class was probably 75% carburetor work and 25% fuel injection which was fine but you don't work on many carbureted cars in the 90's. The study of fuel injection was very helpful to me also. I learned alot.
8. More computer training (spreadsheets and word processors) more hands-on experience (service floor).
9. All students should be a part of the co-op program combining school work with real life experience.
10. Make better use of lab periods.
11. More advanced training preparation for the year 2010 and beyond should be stressed more than learning about last year's models.
12. I am sure the changes I would want are done. (1) better advanced electrical and (2) less emphasis on carburetors.
13. No.
14. No major changes except to stay current on product knowledge and industry trends. Possibly more attention on diagnosis and troubleshooting (problem solving). Good job!
17. P.S. Give me a call. I would love to see the changes in the program in the last five years and talk to graduating students. Norman D. Brook.
18. No.
22. Keep up with technology changes as well as you can.
23. More time on service floor would help.
24. The most effective learning tool is "hands on" - more time spent in lab and on the service floor would have been helpful. Also an entrance test, to separate students into groups of different skill levels would keep quicker students from boredom and slower students from getting confused (although probably not financially feasible).
26. Should cover more emissions concerns.
27. A welding course would have been very helpful.
28. No
29. Emphasize trouble shooting skills.
30. No

31. More computer skills would be good.
32. No
33. More hands-on experience.
35. Improve 4 year degree options.
36. For people planning on being service technicians, more emphasis needs to be put on the electrical and driveability areas of the vehicles. Vehicles change so rapidly and this stuff is complicated and techs need to be very skilled in this area. Electricity scares most techs. It shouldn't be this way.
38. Yes..ASE certifications should be mandatory for graduation of ASEP.
39. More hands on. There are a lot of things you have to learn from experience.
40. I did not think that the history classes helped.
41. No
43. Maybe a course in parts would be helpful.
46. Maybe should explain that real life isn't quite the same as learning in class. Procedures usually are different
when it comes to repairing vehicles.
47. No it was a great program.
49. Better coordination between co-op dealership, student and schooll, pertaining to classes taken at school.
50. Need as muc practical experience as possible.
51. No.
52. No.
53. Maybe more service floor time - 6 hours per day.
55. The computer controlled related courses could be more in depth and include more diagnostics using hand held scan equpment like the Tech I and Tech II scanners, and possiblly include Snap on brand scan tools.
57. No

Question 10. How effective was your service floor experience in preparing you for work?

2. Okay
3. Co-op
6 Very effective
7. Very effective
8. Adequate
11. Service floor did not prepare me for my dealership work experience.
12. Good experience.
13. Good.
14. I would have liked to have spent more time on service floor. It's real life experience.
16. It is not a real world atmosphere, but overall is very good under the circumstances.
17. Its okay. Shows how basic shop works.
19. I was a GM ASEP STUDENT.
21. Very effective, helped me established good customer and peer relations.
22. Quite.
23. Effective. It showed an array for different elements such as shop awareness, safety habits, how to work with others.
25. Very effective.
26. Extremely effective.
28. Effective.
29. It gave me some hands-on experience.
30. Helps show how a shop is run, even for those with little experience.
31. Very.
32. Very

34. Very effective, but too many delays waiting for approvals.
36. Good..I had five years experience as a service tech so it really was no different than work.
37. Hands on experience is the best way to learn.
38. I wasn't on the service floor (ASEP co-op)
41. It helped give me skills to perform my work more effectively.
43. Did not take...I was ASEP.
45. Good, had varied experience working on different manufacturers models.
46. Service floor was a good experience in my education process.
47. Does not apply to my job.
50. Was in ASEP program.
51. Good.
55. It was helpful for improving knowledge of basic repair procedures but needed to have a larger amount of electrical diagnosis.
56. It gave me added hands on experience that is needed in our industry.
57. Pretty effective, but my job required more extensive specialty training that could never be taught in school.

Should any changes be made?

2. Yes. a 4-wheel brake job takes about 3 hours not 3 weeks.
6. Should be able to drive vehicle into and out of shop when working on it. Too much safety.
7. I feel there should be more than 3 instructors on the Service Floor. I found myself spending alot of time waiting for an instructor to free himself to get help or just a signature.
8. More service floor experience would have better prepared me.
11. Pick up the pace while on the service floor.
12. No.
13. More technical using TECH 1 and the new TECH 2 for diagnosis - more real life situations.
16. Concentration on diagnosis based on technology and theory.
17. How dealer warranty works and flat rate works.
20. Did not use in the job I have.
22. Yes, more late model vehicles should be found to work on. Most cars were 5-10 years old. 25. Quality vs. time. All dealers use flat rate - the worst way to fix cars is to rush. Technicians must learn quality as well as speed.
28. Focus more on electronics and driveability.
29. It can be difficult to obtain instructor checks.
31. No.
32. No.
36. The fuss over the shade of blue uniform shirts always seemed dumb. Shirts are shirts, get over it. Less checks on certain repairs would be nice. Have some faith in the kids.
41. More instructors would have made the time spent on the service floor more effective without so much waiting around for signatures or help.
46. Maybe challenge students with time limits on repairs. This may help them in preparing for the flat rate system.
51. More up to date cars should be on the floor.
55. If possible, more emphasis should be put on computer conotrol problems.
56. Use of flat rate times. Giving the students an idea of how they would do in the real world.
57. No

Question 11. How effective was your co-op experience in preparing you for work?

3. Very
4. Did not have one.
10. Excellent
11. High speed high contact is best learning experience.
13. Great.
14. Very--as long as I made the effort to learn many aspects of the company. I have changed positions with Olds several times.
19. Very well.
22. Very.
23. I was not in asep or asset programs.
25. Very effective
26. No co-op experience.
28. Very effective.
29. Co-op AHM.
30. Internship for AHM helps to see what the real world is like.
36. Did not co-op. Did internship for AHM. No co-op for Auto Service.
37. Very. It made my decision to stay in the fixed operations.
38. Extremely effective
40. It gave me the experience of the real world problems.
41. N/A
43. Excellent
46. Did not have co-op.
47. Did not do co-op
54. Very efective

Should any changes be made?

Responses	
Yes	No
2	10

37. Possibly two separate co-ops with classes in-between.
40. Some dealerships only want ASEP students to do oil changes. Students should be able to work on what they learned the semester before.
50. Make sure that a student is working unerneath a Tech, who can watch him and help when needed.
    Also need to try and work on vehicles that have somewhat the same problems as the student has just studied.

Question 12. Was the technological equipment used in your courses and service work up to date?

Responses	
Yes	No
36	2

2. Very good. Better than I have at work.
14. I can't remember using a Tech 1 but otherwise yes.
21. Most of the equipment was up to date.
23. Very helpful in understanding the different types of electronic systems.
26. Needed more injection coverage and less carbureted.
36. The equipment was excellent. Especially the #114 alignment rack. Great. Sure put the C1111 to shame. I hope this was the correct model....it's been awhile.
41. Most of the equipment was up to date however, more usage of the Tech 2 and Techline PC would have been helpful, especially the Techline PC as I use it everyday.

46. Yes, although shortly after I graduated so many new pieces of equipment were introduced. Items such as GM's T-50 system, Tech 2, Chrysler's MDS machine, DRB III.
54. Some of the equipment was up to date...some wasn't.
55. The larger scanning equipment such as scopes, MEA, emission analysis were up to date. But smaller hand held scan tools were lacking use.

Question 13. Are the computers you used and the computer skills you developed in the program useful on the job?

Responses	
Yes	No
33	4

8. I use more word processing and spreadsheet programs in my job, and did not receive adequate training with these programs.
14. Computers have changed vastly and I cannot fault the college. You could spend millions on an annual basis and still not be current.
16. The computer classes were only for the 4 year degree, not 2 year degree. They would have been a good idea however.
19. I don't use a computer at the post office.
22. Did not use computers. I graduated in 1976 from Auto Service.
24. Some adaptability is needed, due to the fact that different shops use different equipment and systems.
25. Computer literacy is absolutely imperative. I am working on CD ROM service manuals. I hope these techs know how to use a computer.
27. It would have been helpful to have more computer courses.
30. EDS relies heavily on computer knowledge.
36. The software was outdated and not current with the business world. Windows should be installed campus wide. WordPerfect and DOS is old news.
38. Yes, everyday I use the skills I learned in my micro computer class.
41. Need more computer usage since we use the computer often.
43. I wish I could have learned a parts finder program.
45. The little exposure with Ford "NAS" tester was helpful. One thing that would be beneficial to students would be an extreme emphasis on EGR, canister purge and fuel systems. I found these to be the most widely misunderstood.
46. Yes, helped with the basics of using the T-50 system for GM.
54. Very useful. Could use more time with computer diagnosis.
55. No matter how much is learned it will never be able to keep up with the pack of technology.

Question 14. If you were to return to school for a Bachelor's degree, would you consider Ferris?

Responses	
Yes	No
25	6

Please explain.

2. I like this school.
3. If close to Holland
6. I already have a B.S. degree.
7. Ferris is one of the highest ranked schools around in the Automotive industry.
8. I only have a few more credits to obtain my B.S. degree. All previous course work for my B.S. was at Ferris.
10. Would have to explore options further before deciding.
11. Highly technical school...very good learning environment...too bad its so far away.
12. I have a family, too far to drive.
13. Ferris is an excellent automotive school.

14. Have and would highly recommend.
16. Already received my B.S. degree in AHM from Ferris.
17. I live in the metropolitan area and the Macomb University Center is close and would be great to earn my B.S. at Ferris University Center. Classes there need to be scheduled for day and evening classes. I would have started, but I worked evenings.
20. Already have a B.S. degree from Ferris in AHM.
21. I would return to Ferris sin the Heavy Equipment 4-year program. Ferris has an excellent reputation for their hands-on technical programs. Keep up the good work.
22. Graduated with a B.S. in Trade and Technical Education in 1978. Nice setting but needs a graduate course towards a M.S. Degree.
23. To learn more about how management works in the industry, as opposed to the technician end. How dealerships inner workings are, understand more about the Big 3 guidelines. Such as engineering and design. There are several reasons that would be too long for explanation
24. Good school/good setting/good instructors. Highly recommended!
25. Already did...AHM.
26. I finished half of the AHM program and dropped out. I may be back.
27. I plan on pursuing an engineering degree and I don't believe Ferris excels in this area. Also a 2,000 commute may be difficult.
28. Have B.S. degree in AHM.
29. Have B.S. degree in AHM.
30. Have B.S. degree in AHM.
35. Pursuing a degree at Wayne State University.
36. Already have a B.S. from Ferris....in AHM. Note: I have an engineering type job in which I provide trouble shooting assistance and repair direction to techs. I also analyze failed engine parts for failure analysis purposes related to warranty.
37. Already did. Never left from school till I completed B.S. degree in AHM.
38. You don't offer any good Bachelors programs (Automotive) for someone who doesn't want to be a manager in the automotive field.
40. I enjoyed Ferris. The instructors worke dwith me and took the time to explain things I did not unerstand. The ASEP program is a good program.
41. I felt Ferris programs were very good compared to the programs completed at other schools by some of my coworkers.
46 Excellent education, although it is a little too far away at this time.
47. I would have to go somewhere local (Mott or U of M Flint).
50. Already have B.S. degree from Ferris.
51. Already did. Good 4 year degree in automotive field.
53. I would want something close to work so I could work also.
55. If they offered an advanced automotive repair degree. The two year program is excellent but I would have preferred more in depth computer controlled diagnosis.
56. Received Bachelors Degree in 1993.
57. Only because of my present location in Arizona.

AUTO SERVICE PROGRAM RELATIVE TO YOUR WORK				
1996 SURVEY				
	Highly Relevant	**Relevant**	**Somewhat Relevant**	**Not Relevant**
Front/Rear wheel alignment	17	15	9	9
Wheel Balancing	8	21	10	9
Major Brake Service	25	17	6	4
Anti-lock brake systems	28	15	6	3
Power steering systems	12	25	7	3
Front wheel drive manual systems	6	20	16	8
Front wheel drive automatic systems	16	22	7	5
Rear wheel drive manual systems	10	20	16	5
Rear wheel drive automatic systems	15	22	10	5
Major engine service	20	15	9	4
Minor engine service	25	18	5	2
Electrical and electronic fundamentals	38	8	2	1
Ignition, starting and charging systems	32	13	2	2
Fuel injection systems	30	14	3	3
Emissions systems	31	11	4	5
Chassis electrical circuits	31	17	2	2
Computerized electrical systems	38	14	2	1
Automotive air conditioning	21	16	6	4
Hazardous materials	9	23	10	8
Personal protection equipment	16	21	10	7
Technician certificate	20	17	5	5
Customer relations	30	13	5	2
Job seeking skills	24	16	6	2
Co-op work experience	21	10	2	7
Service floor experience	24	12	3	4

Ferris State University
Automotive Service Program
Survey of Graduates

1. Where are you currently working?_____
   Address:_____

2. How long have you been employed there?_____

3. What is your present position/job title?_____

4. What was your starting salary? $_____

5. What is your present salary? $_____

6. Was it difficult to find a job when you graduated? Yes____ No____
   Explain:

7. Which phase of your on-campus education (courses, service floor, or co-op) was most valuable in preparing you for work?

8. Based upon your course work at Ferris, were you able to obtain ASE/Michigan certification in all 8 areas? Yes____ No ___
   If not, please explain the area of concern.

9. How effective was your course work in preparing you for work?
   _____

   Should any changes be made?

10. How effective was your service floor experience in preparing you for work?

    Should any changes be made?

11. How effective was your co-op experience in preparing you for work?

Should any changes be made?

12. Was the technological equipment used in your courses and service work up to date?

13. Are the computers you used and the computer skills you developed in the program useful on the job?

14. If you were to return to school for a Bachelor's degree, would you consider Ferris?

Please explain:

AUTO SERVICE PROGRAM RELATIVE TO YOUR WORK

Question: Please rate the relevance of the subject areas that you studied in the Auto Service Program to your work.

1996

	HIGHLY RELEVANT	RELEVANT	SOMEWHAT RELEVANT	NOT RELEVANT
Front/rear wheel alignment				
Wheel balancing				
Major brake service				
Anti lock brake systems				
Power steering systems				
Front wheel drive manual systems				
Front wheel drive automatic systems				
Rear wheel drive manual systems				
Rear wheel drive automatic systems				
Major engine service				
Minor engine service				
Electrical and electronic fundamentals				
Ignition, starting & charging systems				
Fuel injection systems				
Emission systems				
Chassis electrical circuits				
Computerized electrical systems				
Automotive air conditioning				
Hazardous materials				
Personal protection equipment				
Technician certificate				
Customer relations				
Job seeking skills				
Co-op Work Experience				
Service Floor Experience				

graduate.sur

FERRIS STATE UNIVERSITY

October 14, 1996

Dear Ferris State University Alumnus:

All programs at Ferris State University are reviewed every five years. Part of the review process includes an Alumni Review.

The Ferris State University Automotive Service Technology program faculty endeavors to provide you with a high quality two year automotive service degree. To be able to determine the effectiveness of our program and to meet your present and future needs, we need your assistance and input.

Your time and effort is greatly appreciated and is important to this process. If you have any questions please call Greg Key, Professor, Automotive Center at (616) 592-2358. Thank you.

Sincerely,

Gregory Key, Professor
Automotive Service Technology

GK:jo

Enclosure: Alumni Survey

Alumni.sur

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

This was the only area that we had a low response rate do to a survey problem. We had to survey our employers for both curriculum and as employers. As a result many did not return the employer survey thinking that the curriculum survey was more important. We had 17 returns out of 200 for a response rate of 8.5 %. However, as can be seen on question 6 on page 35, all 17 employers stated that they would all hire another graduate from the Ferris State University Automotive Service Technology Program. Furthermore, over 66% of our student are employed by sponsoring dealerships before they start their corporate options. This clearly demonstrates a strong relationship and willingness of employers to hire our students in the automotive service technology program.

Furthermore, cross checking the alumni survey on job placement/positions/salaries (questions 1-6) also indicates a willingness of a broad range of employers to hire our graduates. The survey indicates that nearly 80% (45/57) of the program's graduates have found positions as service technicians (27), service managers (9), or engineers (9). The average length of employment is 2.98 years, and over 90% (51/57) of these jobs are in Michigan. Many of our graduates are working at the corporate level with companies like Borg-Warner, Buick Division GMC, Cummins Diesel, EDS, Eaton, Ford, and Oldsmobile Division GMC. More impressively, over 96% (46/50) of the respondents had no difficulty finding jobs after graduation. Our pre-professional programs with Ford and General Motors, co-op and internship opportunities, and solid reputation in the automotive service industry were key factors cited in many of the responses: "there were numerous job offers while I was still in school" and "a degree from Ferris speaks for itself" were typical.

The average starting salary for AST graduates was $30,127.50. The present salary average reported is $32,785.85. The state average salary for an auto mechanic is between $21,096 and $33,252. The national average salary is $29,305. According to the MOIS system the skilled technician makes two to three times the inexperienced trainees. However, it should be noted that Ferris State University auto service graduates start higher than the state and national averages for all technicians. (See labor market analysis from MOIS).

Return to Ferris for a Bachelor's Degree (Question 14) from alumni survey

33 responses were received to the question "if you were to return to school for a Bachelor's degree, would you consider Ferris?" Nearly 76% (25/33) of the respondents answered yes to this question. This percentage would have been higher, but 8/33 respondents have already completed their Bachelor's degrees in AHM at Ferris. Several respondents commented that the only "problems" with pursuing a Bachelor's degree at Ferris right now would be travel and time away from already good jobs.

These responses reinforce once more the AST Program's ability to produce high-quality, highly-employable graduates. Once more, the large number of those who would consider a Ferris Bachelor's degree in AHM--or who already have earned one --suggests that the program educates as well as trains its students. The current combination of the theoretical and technological phases offered by the AST Program, and the professional and financial success of its graduates, prove this to be a strong, vital program now, and for the future of the university.

EMPLOYER SURVEY OF GRADUATES

1. Which ASE/Michigan vehicle service areas is the employee regularly assigned? (check all that apply)

14	A1 - Engine Repair
8	A2 - Automatic Transmission/Transaxle
9	A3 - Manual Drive Train and Axles
11	A4 - Suspension and Steering
16	A5 - Brakes
15	A6 - Electrical/Electronic Systems
10	A7 - Heating and Air conditioning
14	A8 - Engine Performance
6	L1 - Automobile Advanced Engine Performance
2	Other (specify):

2. Which ASE/Michigan vehicle service areas does the employee need to understand to perform his/her duties? (check all that apply)

14	A1	15	A6
13	A2	14	A7
13	A3	14	A8
13	A4	10	L1
15	A5	2	Other

3. In which ASE/Michigan vehicle service areas is the employee certified? (check all that apply)

10	A1	10	A6
8	A2	9	A7
10	A3	10	A8
10	A4	3	L1
10	A5	3	Other:

EMPLOYER SURVEY

	LOW				HIGH
4.Employee Attitudes and abilities.	1	2	3	4	5
Overall technical knowledge.			4	5	9
Mechanical skill level.			3	5	10
Task organizational practices.		2	1	6	9
Application of efficient work habits.		2	1	5	10
Ability to learn new procedures.			1	7	10
Cooperation and relationships with co-workers.		1	1	4	12
Cooperation and relationships with supervisors.		1	2	3	12
Leadership qualities.		1	5	6	4
Level of confidence to complete tasks.			1	8	9
Ability to diagnose vehicle problems.			6	6	6
Ability to accurately perform vehicle repairs.		1	5	6	10
Interest in developing technical knowledge.			1	4	13
Verbal communication skill level.		1	1	6	10
Written communication skill level.	1		2	7	8
Ability to interact with customers.			3	6	8
Exercises safe work practices.			1	7	10
Appearance and neatness.			1	5	12

5. Specific employee skill levels.					
A1 - ENGINE REPAIR					
General engine diagnosis.		3	6	7	
Removal and reinstallation (R&R).			4	12	
Engine block diagnosis.	1	3	5	7	
Lubrication and cooling systems diagnosis and repair.			6	10	
A2 - AUTOMATIC TRANSMISSION AND TRANSAXLE					
General automatic diagnosis and repair.	1	5	5	2	
Automatic transmission/transaxle maintenance and adjustment.		4	4	6	
In-vehicle automatic transmission/transaxle repair.		6	3	2	
Off-vehicle automatic transmission/transaxle repair.	1	4	3	3	

A3 - MANUAL DRIVE TRAIN AND AXLES					
Clutch diagnosis and repair.		2	3	8	
Manual transmission diagnosis and repair.		3	5	5	
Manual transaxle diagnosis and repair.	1	2	6	4	
Drive shaft and universal joint diagnosis and repair.		2	6	8	
Half shaft and constant-velocity (CV) joint diagnosis and repair.		3	5	7	
Rear axle diagnosis and repair.		4	3	7	
Four-wheel/all-wheel drive component diagnosis and repair.		4	2	5	
A4 - SUSPENSION AND STEERING					
Steering systems diagnosis and repair.	1	2	4	8	
Suspension systems diagnosis and repair.		2	4	9	
Wheel alignment diagnosis, adjustment, and repair.		4	3	7	
Wheel/tire diagnosis and repair.			4	8	

A5 - BRAKES					
Hydraulic system diagnosis and repair.			7	11	
Drum brake diagnosis and repair.			6	12	
Disc brake diagnosis and repair.			6	12	
Power assist units diagnosis and repair.			8	10	
Anti-lock brake systems diagnosis and repair.		5	4	8	
A6 - ELECTRICAL/ELECTRONIC SYSTEMS					
General electrical system diagnosis.		3	4	9	
Battery diagnosis and service.		1	5	11	
Starting system diagnosis and repair.		1	6	10	
Charging system diagnosis and repair.		2	5	10	
Lighting systems diagnosis and repair.		3	5	9	
Wipers, horn, gauges, and warning devices diagnosis and repair.		2	6	9	
Accessories diagnosis and repair.		2	6	9	

A7 - HEATING AND AIR CONDITIONING					
A/C system diagnosis and repair.			4	2	7
Refrigeration system component diagnosis and repair.			3	3	7
Heating and engine cooling systems diagnosis and repair.			1	4	9
Operating systems and related controls diagnosis and repair.			4	4	6
Refrigerant recover, recycling, and handling.			1	3	9
A8 - ENGINE PERFORMANCE					
General engine diagnosis.			4	5	8
Computerized engine controls diagnosis and repair.		3	3	4	7
Ignition system diagnosis and repair.		2	2	5	7
Fuel, air induction, and exhaust system diagnosis and repair.		2	3	4	8
Emissions control systems diagnosis and repair.		2	4	2	8

L1 - AUTOMOBILE ADVANCED ENGINE PERFORMANCE					
General powertrain diagnosis.			4	5	5
Computerized powertrain controls diagnosis.		2	4	2	5
Ignition system diagnosis.		2	2	4	6
Fuel systems and air induction systems diagnosis.		2	4	2	5
Emissions control systems diagnosis.		2	3	2	6
I/M (Inspection/Maintenance) failure diagnosis.			4	1	6

6. Based on your experience with this employee, would you consider hiring another graduate of the Ferris State University automotive service technology program?

YES	17
NO	

EMPLOYER SURVEY OF GRADUATES COMMENTS

---

1. Name of Employer: Seif Chevrolet **Name of Employee:** Scott Baumgartner **Job Title:** Technician **Comments:** In the basic areas Ferris is doing fine. In the engine electronics and fuel management areas, the mark is being missed. It took six months to a year to get this employee to a basic workable status. I understand that this is the most difficult area of repair, that's why we need more focus in that area. This employee has quit his job and has gone into retail sales in some unrelated field.

2. Name of Employer: Urka Auto Center **Name of Employee:** Bruce Barnhardt **Job Title: Service Technician** No comments

3. Name of Employer: Shaheen Chevrolet **Name of Employee:** Matt Rosso
Job Title: Technician **Comments:** Attitude: Thought he was worth much more than we did at the time. He was well on his way to becoming a seasoned valuable tech. I took this tech from another GM store because he wasn't getting a good education there. We trained him and as he was nearing the time to go on-line, he left us and went to another dealer for a few dollars more after we had given him a raise. Loyalty is a thing of the past with most young people. It's money, money, money! I have another ASEP student at this time and I hope this one works out and stays.

4. Name of Employer: Ed Koehn Ford, Lincoln, Mercury **Name of Employee:** Adam Rodenhouse
Job Title: Apprentice Technician No comments

5. Name of Employer: Capitol Cadillac, Lansing
Comments: Train and teach graduates they have a responsibility to sponsoring dealership. Graduation from this program does not make them a fully qualified technician. Nothing can substitute for years of experience, that cannot be found in a book! Graduates should not expect to come out of school and earn a wage on a level with an experienced technician. They are marginally ahead of an apprentice that spent two years with his nose in an engine instead of an English book. Working at sponsoring dealership for a two year period after graduation should be stressed. Leaving for 50 cents to $1 per hour more shows shallow character.

6. Name of Employer: Harvey Cadillac Co. **Name of Employee:** Brian Johnson **Job Title:** Technician No comments.

7. Name of Employer: Versendaal L&M **Name of Employee:** Steve Stokes **Job Title:** Automotive Technician Trainee No comments

8. Name of Employer: Moore Motor Sales, Caro, MI **Name of Employee:** Aaron Britt

Comments: Students need all electrical and electronic diagnosis and repair skills that are available on latest test equipment procedures. Students need more training regarding social relationships with coworkers and management. We need to instill a feeling of serving our customers needs and wants.

9. Name of Employer: Leutheuser Motors Inc. **Name of Employee:** Seth Zeiler **Job Title:** Service Technician **Comments:** Seth needs to pay attention to details; he often forgets to turn in repair orders in a timely manner. He neeeds to improve his technical writing skills.

10. Name of Employer: Carriage Motors **Name of Employee:** Al Runyon **Job Title:** Technician **Comments:** I employ some FSU automotive service tech students now on a part-time basis. I also have an ASEP student.

11. Name of Employer: Feeny CPD **Name of Employee:** James P. Brown **Job Title:** Service Manager **Comments:** 4 year degree from AHM - 2 year Assocciate Degree. Actually transferred from Erie C.C. (Buffalo, NY).

12. Name of Employer: Saturn of Grand Rapids **Name of Employee:** Cliff Ranger **Job Title:** Service Technican **Comments:** None

13. Name of Employer: Benchley Bros. **Name of Employee:** Eric Cotter **Job Title:** Mechanic
Comments: He has been an excellent employee.

14. Name of Employer: Tallberg Chev-Olds-GEO **Name of Employee:** Mike Piehl, Derek Engle, Jeff Milner, Adam Nasler, Gordon Norshal, Dan Seaman and Mark Tomlanovich **Job Title:** Service Advisory, Body Shop Advisory, Service Technicians. **Comments:** As time proceeds all technicians will absolutely need electrical-electronic and computer skills as we are seeing and it is planned to have all systems monitored and run by some for of computer. Also with the industry turning this way the voltages and amperages are very low and absolutely necessary to correct operation and diagnosis.

15. Name of Employer: Wagar Motors **Name of Employee:** Mike Rusnell **Job Title:** Technician **Comments:** Mike is a very valuable asset to the dealership. A technician's job is very difficult now days. It takes a specially motivated person that has the ability to constantly learn and apply it.

16. Name of Employer: Bonney Motor Sales **Name of Employee:** Alan Westmaas **Job Title:** Technician **Comments:** Working with people who have a solid undestanding in theory is essential on today's automobile. Thank you for promoting and training in this area.

17. Name of Employer: Bonney Motor Sales **Name of Employee:** Timothy J. Morris **Job Title:** Technician **Comments:** Quality Auto techs are very hard to find...keep trying

and thank you.

18. Name of Employer: Dick Morris Chevrolet **Name of Employee:** Frank Massaria **Job Title:** Technician **Comments:** Frank is a highly motivated individual who takes pride in doing his job to the best of his abilities.

19. Name of Employer: Don Seelye Ford Inc: **Name of Employee:** Jason Newton **Job Title:** Automotive Technician **Comments:** The experience with Ford and the dealership cannot come from anywhere else. The ASSET student comes to the dealership more prepared than an experienced tech who has no dealership experience.

Ferris State University Automotive Service Technology Program
Employer Survey of Graduates

Name of employer: _____

Name of employee: _____

Employee job title: _____

Date employee was hired (month/year): _____ 19____

1. Which ASE/Michigan vehicle service areas is the employee regularly assigned? (Check all that apply):

- ☐ A1 - Engine Repair
- ☐ A2 - Automatic Transmission/Transaxle
- ☐ A3 - Manual Drive Train and Axles
- ☐ A4 - Suspension and Steering
- ☐ A5 - Brakes
- ☐ A6 - Electrical/Electronic Systems
- ☐ A7 - Heating and Air Conditioning
- ☐ A8 - Engine Performance
- ☐ L1 - Automobile Advanced Engine Performance
- ☐ Other (specify)_____

2. Which ASE/Michigan vehicle service areas does the employee need to understand to perform his/her duties? (Check all that apply)

☐	A1	☐	A6
☐	A2	☐	A7
☐	A3	☐	A8
☐	A4	☐	L1
☐	A5	☐	Other_____

3. In which ASE/Michigan vehicle service areas is the employee certified? (Check all that apply)

☐	A1	☐	A6
☐	A2	☐	A7
☐	A3	☐	A8
☐	A4	☐	L1
☐	A5	☐	Other

(Continued)

4. Employee attitudes and abilities.

Please rate the following items that apply to your employee.
Circle your response based on the expectations of an entry-level technician.

Low				High	
1	2	3	4	5	Overall technical knowledge.
1	2	3	4	5	Mechanical skill level.
1	2	3	4	5	Task organizational practices.
1	2	3	4	5	Application of efficient work habits.
1	2	3	4	5	Ability to learn new procedures.
1	2	3	4	5	Cooperation and relationships with co-workers.
1	2	3	4	5	Cooperation and relationships with supervisors.
1	2	3	4	5	Leadership qualities.
1	2	3	4	5	Level of confidence to complete tasks.
1	2	3	4	5	Ability to diagnose vehicle problems.
1	2	3	4	5	Ability to accurately perform vehicle repairs.
1	2	3	4	5	Interest in developing technical knowledge.
1	2	3	4	5	Verbal communication skill level.
1	2	3	4	5	Written communication skill level.
1	2	3	4	5	Ability to interact with customers.
1	2	3	4	5	Exercises safe work practices.
1	2	3	4	5	Appearance and neatness.

Comments:_____

_____

-

(Continued)

5. Specific employee skill levels.
Please rate the following ASE related task areas that apply to your employee.
Circle your response based on the expectations of an entry-level technician.

A1 - Engine Repair

Low - High

1 2 3 4 5 General engine diagnosis.

1 2 3 4 5 Removal and reinstallation (R&R).

1 2 3 4 5 Engine block diagnosis.

1 2 3 4 5 Lubrication and cooling systems diagnosis and repair.

A2 - Automatic Transmission and Transaxle

1 2 3 4 5 General automatic transmission/transaxle diagnosis.

1 2 3 4 5 Automatic transmission/transaxle maintenance and adjustment.

1 2 3 4 5 In-vehicle automatic transmission/transaxle repair.

1 2 3 4 5 Off-vehicle automatic transmission/transaxle repair.

A3 - Manual Drive Train and Axles

1 2 3 4 5 Clutch diagnosis and Repair

1 2 3 4 5 Manual transmission diagnosis and repair.

1 2 3 4 5 Manual transaxle diagnosis and repair.

1 2 3 4 5 Drive shaft and universal joint diagnosis and repair.

1 2 3 4 5 Half shaft and constant-velocity (CV) joint diagnosis and repair.

1 2 3 4 5 Rear axle diagnosis and repair.

1 2 3 4 5 Four-wheel/all-wheel drive component diagnosis and repair.

(Continued)

A4 - Suspension and Steering

Low - High

1 2 3 4 5 Steering systems diagnosis and repair.

1 2 3 4 5 Suspension systems diagnosis and repair.

1 2 3 4 5 Wheel alignment diagnosis, adjustment, and repair.

1 2 3 4 5 Wheel/tire diagnosis and repair.

A5 - Brakes

1 2 3 4 5 Hydraulic system diagnosis and repair.

1 2 3 4 5 Drum brake diagnosis and repair.

1 2 3 4 5 Disc brake diagnosis and repair.

1 2 3 4 5 Power assist units diagnosis and repair.

1 2 3 4 5 Anti-lock brake systems diagnosis and repair.

A6 - Electrical/Electronic Systems

1 2 3 4 5 General electrical system diagnosis.

1 2 3 4 5 Battery diagnosis and service.

1 2 3 4 5 Starting system diagnosis and repair.

1 2 3 4 5 Charging system diagnosis and repair.

1 2 3 4 5 Lighting systems diagnosis and repair.

1 2 3 4 5 Wipers, horn, gauges, and warning devices diagnosis and repair.

1 2 3 4 5 Accessories diagnosis and repair.

(Continued)

A7 - Heating and Air Conditioning

Low - High

1 2 3 4 5 A/C system diagnosis and repair.

1 2 3 4 5 Refrigeration system component diagnosis and repair.

1 2 3 4 5 Heating and engine cooling systems diagnosis and repair.

1 2 3 4 5 Operating systems and related controls diagnosis and repair.

1 2 3 4 5 Refrigerant recovery, recycling, and handling.

A8 - Engine Performance

1 2 3 4 5 General engine diagnosis.

1 2 3 4 5 Computerized engine controls diagnosis and repair.

1 2 3 4 5 Ignition system diagnosis and repair.

1 2 3 4 5 Fuel, air induction, and exhaust system diagnosis and repair.

1 2 3 4 5 Emissions control systems diagnosis and repair.

L1 - Automobile Advanced Engine Performance

1 2 3 4 5 General powertrain diagnosis.

1 2 3 4 5 Computerized powertrain controls diagnosis.

1 2 3 4 5 Ignition system diagnosis.

1 2 3 4 5 Fuel systems and air induction systems diagnosis.

1 2 3 4 5 Emissions control systems diagnosis.

1 2 3 4 5 I/M (Inspection/Maintenance) failure diagnosis.

Comments: _____

(Continued)

6. Based on your experience with this employee, would you consider hiring another graduate of the Ferris State University automotive service technology program?

_____Yes _____No

Comments:_____

_____

_____

_____

_____

_____

SECTION 4

Automotive Service Technology
Student Survey Report
November 14, 1996

Programs Represented:

ASEP (Automotive Service Educational Program Excellence Program)

ASSET (Automotive Student Service Educational Training Program)

Comprehensive (Non Corporate Program)

Survey Report Format: This survey report is broken into four areas. A brief overview of the survey area results will be covered as well as some student comments pertaining to each area.

The four surveyed areas are:
1. Professors
2. Curriculum/Instruction
3. Facilities
4. Equipment

Professors: The heaviest survey responses pertaining to professors fell in the B and C categories. There was a small sprinkling of responses in the A, D, E, and F categories. Many more responses fell in the A category than the F category. Generally the students feel their professors are knowledgeable, kind, courteous, organized, concerned for students and available for assistance. Students written comments varied greatly. Some students felt certain professors were better or worse than others. These views were in some cases diametrically apposed to each other. For instance, one student comments how great his professor is, while another states he did not like the same professor.

Curriculum/
Instruction: Responses pertaining to curriculum and instruction were ranked from A to F; however, most responses fell in the B and C categories with a few responses falling in the A, D, E and F rankings. Generally students are happy with the curriculum and instruction. Survey question "quality of

materials presented in class" received 45 responses; 7 responses fell under the A category, 19 in the B category, 17 C category, 1 D category and 1 E category. None of the responses fell in the F category.

One concern may lay in the fact that the question "overall quality of the Service Floor" received 8 (F) responses and the overall quality of internships received 9 (F) responses. These negative responses represent 24% of the total. It should be noted that many of the students surveyed were presently serving on the Service Floor.

Facilities: This category covered: Classroom Condition, Building Condition and Custodial Services. All of these categories scored very well. Classroom Condition and Building/Facility received all responses at "C" or higher. Custodial Services had 13 of its 15 responses in the C level or higher. Overall, Students are happy with the facilities and think that the Custodial Services are very good. Overall quality of the facilities and equipment received 100% of the responses in the C or higher category.

Equipment: All 44 responses regarding equipment technology scored in the "C" or higher categories, with 10 in the "A" range and 21 in the "B" range. Maintenance of equipment and tools also scored highly as well as equipment and tool availability.

Summary

Overall, students ranked the Automotive Service Technology program very highly. The total number of response percentages are as follows.

Rank	Number	Percent
(A) Category	382	13.8
(B) Category	1023	37.0
(C) Category	922	33.0
(D) Category	274	10.0
(E) Category	132	5.0
(F) Category	31	1.2

STUDENT SURVEY-YOUR PROFESSORS	ASEP						ASSET						COMPREHENSIVE			
	YOUR PROFESSORS						YOUR PROFESSORS						YOUR PROFESSORS			
	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D
1. Are your professors kind, courteous and helpful to students?	1	8	6				5	1	7	1			2	7	6	
2. Instructor's overall mastery of subject matter.	4	9	3				6	1	3	3	1		3	1	10	1
3. Professor's organization of course.	1	8	6					1	4	4	4	1		8	7	
4. Professor's clarity of presentations.		6	10				1	3	5	5			1	7	7	
5. Professor's stimulation of interest.		6	5	3	1			2	5	8	1		1	3	5	2
6. Professor's availability for assistance.	1	6	7	2				1	3	8	2		1	4	4	3
7. Professor's ability to advise on class schedules and other advisory duties.	1	3	10	2			3		3	5	3		3	4	3	3
8. Professor's impartiality on grades and exams.	1	5	10				3	3	2	2	4			8	5	
9. Professor's concern for students.	1	3	11	1			5	2	6	1			2	6	4	2
10. Professor's punctuality.	2	7	7				2	2	3	5	2		5	6	4	
11. Professor's professionalism in and out of class.	1	7	6	2			3	5	3	2	1		5	6	3	1

12. Overall quality of your professor's instruction.	1 6 6 3	1 4 4 4 1	1 6 8

YOUR INSTRUCTOR

	ASEP	ASSET	COMPREHENSIVE
	YOUR INSTRUCTOR A B C D E F	YOUR INSTRUCTOR A B C D E F	YOUR INSTRUCTOR A B C D
1. Quality of the material presented in class.	3 8 5	4 2 6 1 1	9 6
2. Material presented meets up to date standards.	2 10 4	5 2 4 1 2	2 7 6
3. Pace material was presented.	2 6 7 1	1 2 6 3 2	6 8
4. Equipment quality and condition.	1 7 7 1	3 4 5 1 1	1 8 6
5. Relevance of material presented.	1 8 7	3 3 3 3 2	1 9 2 2
6. Media used to present material, i.e. white board, slides, video, overhead projectors, etc.	3 7 6	4 5 4 1	3 5 7
7. Difficulty of material in reference to the level of course.	1 7 8	5 5 3	4 7 4

8. Completeness of material presented.	2	6	7	1			1	3	2	5	3		1	7	7				
9. Depth of material presented.	2	8	5	1			3	1	2	7	1			8	5				
10. Overall quality of internship.	4	9	3				8		1	2	3				4				
11. Overall quality of service floor.		3	3		1	6	5	1		3	3	2	2	3	7	2			
12. Overall quality of instruction.	2	9	5				2	3	3	5	1		1	6	6	2			

FACILITIES AND EQUIPMENT

	ASEP						ASSET						COMPREHENSIVE						
	FACILITIES & EQ.						FACILITIES & EQ.						FACILITIES & EQ.						
	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D			
1. Classroom conditions.	1	9	5				2	5	4	3			3	5	5	1			
2. Building/facility overall conditions.	1	11	3				1	6	4	3			3	7	4	1			
3. Custodial Services.	2	9	2	1	1		3	1	6	2	1	1	4	7	4				
4. Maintenance of equipment and tools	1	10	2	2			3	3	4	3	1			6	4	2			

5. Equipment technology up to date.	2	10	3				6	2	6				2	9	4								
6. Tool and equipment availability.	2	9	3	1			2	5	4	3			1	9	3	2							
7. Overall quality of facilities and equipment.	1	11	3				3	4	6	1			3	7	5								

FACILITIES AND EQUIPMENT - TOTALS

1. Classroom conditions.	6	19	14	4	1	0
2. Building/facility overall conditions.	5	29	11	4	1	0
3. Custodial Services.	9	17	12	3	2	0
4. Maintenance of equipment and tools	4	19	10	7	1	0
5. Equipment technology up to date.	10	21	13	0	0	0
6. Tool and equipment availability.	5	23	10	6	0	0
7. Overall quality of facilities and equipment.	7	22	14	1	0	0

STUDENT SURVEY COMMENTS

Your Professors:

ASEP Students comments:

1. Most of them are kind, one of them can't teach at all.
   Gahrs is not organized at all.
   Some of them don't care.
   Gahrs is too old to be teaching.

2. 50/50 of them are kind, courteous and helpful to students.

SERVICE FLOOR Students comments:

1. Peter Alley and John Gahrs are excellent.

Your Instruction:

SERVICE FLOOR Students comments:

1. Be nice if one more instructor were on the floor.
2. Depth of material presented: Some too deep.

Facilities and Equipment:

SERVICE FLOOR Students comments:

1. Need air conditioning.
2. Ferris has a terrible manual selection. They do not have enough. I feel there needs to be a change with the way Service Floor is handled. If there is going to be "flat rate" there better be more instructors. Ferris is a good school but not as good as most professors think. Also there are some very close minded professors.

Student.com

AUTOMOTIVE SERVICE TECHNOLOGY FALL 1996
STUDENT SURVEY

Please answer all of the following questions truthfully and to the best of your ability. If you feel the question does not apply to you, or a question that you do not have an opinion on, please check the N/A box.

The survey is intended to rate your major courses only. Do not rate related courses such as English, Math, History, etc.

About you: Are you a

- Freshman ☐
- Sophomore ☐
- Junior ☐
- Senior ☐

Are you presently enrolled in

- ASEP ☐
- ASSET ☐
- CAP ☐
- COMPREHENSIVE ☐
- AHM ☐

Please rate the following questions:
A = Excellent
B = Above Average
C = Average
D = Below Average
E = Unacceptable
F = N/A (not applicable)

YOUR PROFESSORS

	A	B	C	D	E	F
1. Are your professors kind, courteous and helpful to students?	☐	☐	☐	☐	☐	☐
2. Instructor's overall mastery of subject matter.	☐	☐	☐	☐	☐	☐
3. Professor's organization of course.	☐	☐	☐	☐	☐	☐
4. Professor's clarity of presentations.	☐	☐	☐	☐	☐	☐
5. Professor's stimulation of interest.	☐	☐	☐	☐	☐	☐
6. Professor's availability for assistance.	☐	☐	☐	☐	☐	☐
7. Professor's ability to advise on class schedules and other advisory duties.	☐	☐	☐	☐	☐	☐
8. Professor's impartiality on grades and exams.	☐	☐	☐	☐	☐	☐
9. Professor's concern for students.	☐	☐	☐	☐	☐	☐
10. Professor's punctuality.	☐	☐	☐	☐	☐	☐
11. Professor's professionalism in and out of class.	☐	☐	☐	☐	☐	☐
12. Overall quality of your professor's instruction.	☐	☐	☐	☐	☐	☐

YOUR INSTRUCTION

	A	B	C	D	E	F
1. Quality of the material presented in class.	☐	☐	☐	☐	☐	☐
2. Material presented meets up to date standards.	☐	☐	☐	☐	☐	☐
3. Pace material was presented.	☐	☐	☐	☐	☐	☐
4. Equipment quality and condition.	☐	☐	☐	☐	☐	☐
5. Relevance of material presented.	☐	☐	☐	☐	☐	☐
6. Media used to present material, i.e., white board, slides, video, overhead projectors, etc.	☐	☐	☐	☐	☐	☐
7. Difficulty of material in reference to the level of the course.	☐	☐	☐	☐	☐	☐
8. Completeness of material presented.	☐	☐	☐	☐	☐	☐
9. Depth of material presented.	☐	☐	☐	☐	☐	☐
10. Overall quality of internship.	☐	☐	☐	☐	☐	☐
11. Overall quality of service floor.	☐	☐	☐	☐	☐	☐
12. Overall quality of instruction.	☐	☐	☐	☐	☐	☐

FACILITIES AND EQUIPMENT

	A	B	C	D	E	F
1. Classroom conditions.	☐	☐	☐	☐	☐	☐
2. Building/Facility overall conditions.	☐	☐	☐	☐	☐	☐
3. Custodial services.	☐	☐	☐	☐	☐	☐
4. Maintenance of equipment and tools.	☐	☐	☐	☐	☐	☐
5. Equipment technology up to date.	☐	☐	☐	☐	☐	☐
6. Tool and equipment availability.	☐	☐	☐	☐	☐	☐
7. Overall quality of facilities and equipment.	☐	☐	☐	☐	☐	☐

9-18-96.DOC

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS						
GOALS AND OBJECTIVES	POOR	BELOW EXPEC	ACCEP-TABLE	GOOD	EXCEL-LENT	DON'T KNOW
1. Participation in Development of College Occupational Education Program Plan		1	1	7	2	
2. Program Goals			4	6		1
3. Course Objectives			3	2	5	
4. Competency Based Performance Objectives		1		9		1
5. Use of Competency Based Performance	1	2	2	4	1	1
6. Use of Information on Labor Market Needs		1	1	4	4	1
7. Use of information on Job Performance Requirements			2	5	3	1
8.Use of Profession/Industry Standards		1		4	6	
9. Use of Student follow-up Information		1	1	7	2	
PROCESSES						
10. Adaptation of instruction		1	1	5	4	
11. Relevance of Supportive Courses		1	2	4	3	1
12. Coordination with Other Community Agencies and Educational Programs				5	6	
13. Provision for Work Experience, Cooperative Education or Clinical				4	5	2

	Experience												
	14.Program Availability and Accessibility			1	2	8							
	15. Provision for the Disadvantaged		2	3	4	2							
	16. Provision for the Handicapped		1	3	2	2	2						
	17. Efforts to Achieve Sex Equity		1	1	6	3							
	18. Provision for Program Advisement				2	9							
	19. Provision for Career Planning and Guidance				5	5	1						
	20. Adequacy of Career Planning and Guidance			1	3	7							
	21. Provision for Employability Information				3	8							
	22. Placement Effectiveness for Students in this Program				2	9							
	23. Student Follow-up System		1	2	5	1	2						
	24. Promotion of this Occupational Program		1	5		4	1						
RESOURCES													
	25. Provision for Leadership and Coordination		1	2	6	2							
	26.Qualifications of Administrators and/or Supervisors		1	2	5	3							
	27. Instructional Staffing			1	4	6							
	28. Qualifications of Instructional Staff				2	9							

29. Professional Development Opportunities			1	2	8		
30. Use of Instructional Support Staff	1	3	2	2	3		
31. Use of Clerical Support Staff			1	4	6		
32. Adequacy and Availability of Instructional Equipment		1	2	3	5		
33. Maintenance and Safety of Instructional Equipment			2	1	7	1	
34. Adequacy of Instructional Facilities		1	2	3	2		
35. Scheduling of Instructional Facilities			1	6	4		
36. Adequacy and Availability of Instructional				6	5		
37. Adequacy and Availability of Learning Resources			2	5	4		
38. Use of Advisory Committees			2	3	6		
39. Provisions in Current Operating Budget	1	6		4			
40. Provisions in Capital Outlay Budget for Equipment	1	3	3	3	1		

11. Not sure how the mathematics course relate to the material on the automobile. . Similarity how well the physics course relate to the vehicle as well.

16. Difficult to do, very costly. Not an industry that handicapped usually pursue.

10. No systematic provisions for slow or very good learners.

34. Need multi-media rooms.

36. Good enough to maintain but not enhance the program.

11. More or less determinied by NC accreditation requirements.

13. Only for corporate programs.

27. Starting to have an understaffing promblem.

15. Do not do much for students with reading programs or foreign students

19. Most are day students, they have access.

30. Usually not available.

32. We see effects of limited budgets in past years.

35. Sometimes labs are in conflict regarding vehicles or equipme

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

1. What are the chief occupational educational strengths of you program?

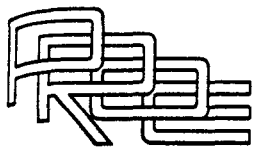
1.) Excellent facility and staff that cares about the program. Good use of advisory committee.
2.)Provide excellent training to prepare entry-level technicians and for those continuing . onto a B.S. degree.
3.) The strength of our program is in the technical competence of our instructors plus the amount of time allotted to "hands on" instruction.
4.)Our corporate sponsored programs with Ford, GM and Chrysler.
5.)Quality training materials are provided to our students by materials donated by the big 3 domestic manufactures of automobiles. Not only do we get excellent training materials but current automobiles to work on. I believe our faculty are highly trained professionals seeking the embetterment of our students and them selves.
Our students not only get lecture and lab times on donated equipment but also get to experience real world situation. They get to work on live customer vehicles and those in the the corporate programs get to have a dealership experience working on vehicles prior to graduation.
I believe we have the best automotive program in the state and maybe even in the nation.
6. ..... Large instructor group with different work experience.
.....Its ability to work with auto manufactures
.....Student's have a choice of corporate co-op programs as well as traditional on campus auto programs.
.....Instructors are up to date technically through corporate training courses.
.....Grad's are liked by Michigan auto dealers and manufactures.
7. Faculty, program organization, reputation.

2. What re the major needs for improvement in your program and what action is required to achieve these improvements?
1. Building repair and remodel, parking lot repair, service floor face lift, grounds improvement
2. Building inferior (service floor), major multi-media room upgrade, more modern . equipment money.
3. We need to move in a direction that allows us to provide training to technicians that are not interested in General Ed courses (certificate programs) and to offer a broader choice of course selections and program options.
4. Not aware of any major needs!!
5. I believe we need to get import manufactures involved in our programs like Ford, GM, & Chrysler are. We need vehicles, training materials, and donated equipment to train on, as well as training for our faculty.
Additionally as a faculty member I believe we need to form a committee in order to decide who is the best qualified to teach certain classes. Sometimes I feel the students do not get the best training they could receive because a faculty member is given a new prep and has not been able to audit the class prior to teaching it. How can one faculty member do as good a job teaching a class his first time compared to the who has taught the class 20 years if this opportunity is not provided. I realize this is trying to be solved by hiring a coordinator in each program area. I hope this shifts this trend that I have seen since being hired at Ferris.
This problem has occurred to me on rare occasions but I sure would like for it to be avoided.
6. Need to develop and implement a program in the first semester to improve retention by mandating outside help (tutors? SLA? superised study?) when a student drops below a "C in any automotive class need to have a comprehensive absence/tradiness plan that emphasizes the importance of these factors in student success at FSU and on the Job.

Automotive Service Technology

APRC 1996-1997

Section 2 of 4



Michigan Community Colleges

COLLEGE_____

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

INSTRUCTIONS TO RESPONDENTS

On the following pages you are asked to give your perceptions of your occupational program (such as registered nursing, automotive technology, secretarial science). The items you are asked to rate are grouped into the major components of the Program Review in Occupational Education (PROE) system, namely:

- Goals and Objectives
- Processes
- Resources

Rate each item by checking your best judgment on a five point scale ranging from poor to excellent. Only check one answer per item. A "Don't Know" column has been provided in the event you really don't have sufficient information to rate an item. Space has been provided for you to note comments that may help to clarify your ratings or to indicate modifications of a standard to make it more relevant for your program.

Criteria for excellent and poor ratings are provided for each item. *Excellent* represents a nearly ideal or exemplary situation; *poor,* one of serious inadequacy. As a guide, ratings may be made with the following in mind:

EXCELLENT means ideal, top 5 to 10%
GOOD is a strong rating, top 1/3rd
ACCEPTABLE is average, the middle 1/3rd
BELOW EXPECTATIONS is only fair, bottom 1/3rd
POOR is seriously inadequate, bottom 5 to 10%

This form may be completed as a *consensus* evaluation by the principal persons involved with a specific occupational program. Examples of such persons would be instructors, department or division chairpersons, program coordinators, and administrators such as occupational dean. If preferred, respondents may complete individual forms.

To help with tabulation of responses, please provide the information requested below before completing your rating.

PROGRAM TITLE_____ USOE CODE #__ __.__ __ __ __ __ __ __

PERSONS PARTICIPATING IN CONSENSUS EVALUATION OR INDIVIDUAL COMPLETING THIS FORM:

Name	Title
_____	_____
_____	_____
_____	_____
_____	_____

Thanks for your cooperation!

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Keypunch Instructions	Poor	Below Expectations	Acceptable	Good	Excellent	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
	1	2	3	4	5		

GOALS AND OBJECTIVES

1. **Participation in Development of College Occupational Education Program Plan** — 1

   Excellent—Administrators and/or other supervisory personnel involved in developing and revising the college plan for this occupational program seek and respond to faculty, student and community input.

   Poor—Development of the plan for this program is basically the work of one or two persons in the college.

2. **Program Goals** — 2

   Excellent—Written goals for this program state realistic outcomes (such as planned enrollments, completions, placements) and are used as one measure of program effectiveness.

   Poor—No written goals exist for this program.

3. **Course Objectives** — 3

   Excellent—Written measurable objectives have been developed for all occupational courses in this program and are used to plan and organize instruction.

   Poor—No written objectives have been developed for courses in this program.

4. **Competency Based Performance Objectives** — 4

   Excellent—Competency based performance objectives are on file in writing, consistent with employment standards, and tell students what to expect and help faculty pace instruction.

   Poor—Competency based performance objectives have not been developed for courses in this program.

5. **Use of Competency Based Performance Objectives** — 5

   Excellent—Competency based performance objectives are distributed to students and used to assess student progress.

   Poor—Competency based performance objectives are not used with students for progress evaluation nor are students aware that they exist.

6. **Use of Information on Labor Market Needs** — 6

   Excellent—Current data on labor market needs and emerging trends in job openings are systematically used in developing and evaluating this program.

   Poor—Labor market data is not used in planning or evaluation.

7. **Use of Information on Job Performance Requirements** — 7

   Excellent—Current data on job performance requirements and trends are systematically used in developing and evaluating this program and content of its courses.

   Poor—Job performance requirements information has not been collected for use in planning and evaluating.

63

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
GOALS AND OBJECTIVES (Continued)							
8. Use of Profession/Industry Standards — *Excellent*—Profession/industry standards (such as licensing, certification, accreditation) are consistently used in planning and evaluating this program and content of its courses. *Poor*—Little or no recognition is given to specific profession/industry standards in planning and evaluating this program.	8						
9. Use of Student Follow-Up Information — *Excellent*—Current follow-up data on completers and leavers (students with marketable skills) are consistently and systematically used in evaluating this program. *Poor*—Student follow-up information has not been collected for use in evaluating this program.	9						
PROCESSES							
10. Adaptation of Instruction — *Excellent*—Instruction in all courses required for this program recognizes and responds to individual student interests, learning styles, skills, and abilities through a variety of instructional methods (such as small group or individualized instruction, laboratory or "hands on" experiences, open entry/open exit, credit by examination). *Poor*—Instructional approaches in this program do not consider individual student differences.	10						
11. Relevance of Supportive Courses — *Excellent*—Applicable supportive courses (such as anatomy and physiology, technical communications, technical mathematics) are closely coordinated with this program and are kept relevant to program goals and current to the needs of students. *Poor*—Supportive course content reflects no planned approach to meeting needs of students in this program.	11						
12. Coordination with Other Community Agencies and Educational Programs. — *Excellent*—Effective liaison is maintained with other programs and educational agencies and institutions (such as high schools, other community colleges, four year colleges, area vocational schools, proprietary schools, CETA) to assure a coordinated approach and to avoid duplication in meeting occupational needs of the area or community. *Poor*—College activities reflect a disinterest in coordination with other programs and agencies having impact on this program.	12						
13. Provision for Work Experience, Cooperative Education or Clinical Experience. — *Excellent*—Ample opportunities are provided for related work experience, cooperative education, or clinical experience for students in this program. Student participation is well coordinated with classroom instruction and employer supervision. *Poor*—Few opportunities are provided in this program for related work experience, cooperative education, or clinical experience where such participation is feasible.	13						

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanations, remarks or needs for improvement)

PROCESSES (Continued)

14. Program Availability and Accessibility — 14

Excellent—Students and potential students desiring enrollment in this program are identified through recruitment activities, treated equally in enrollment selection, and not discouraged by unrealistic prerequisites. The program is readily available and accessible at convenient times and locations.

Poor—This program is not available or accessible to most students seeking enrollment. Discriminatory selection procedures are practiced.

15. Provision for the Disadvantaged — 15

Excellent—Support services are provided for disadvantaged (such as socioeconomic, cultural, linguistic, academic) students enrolled in this program. Services are coordinated with occupational instruction and results are assessed continuously.

Poor—No support services are provided for disadvantaged students enrolled in this program.

16. Provision for the Handicapped. — 16

Excellent—Support services are provided for handicapped (physical, mental, emotional, and other health impairing handicaps) students enrolled in this program. Facilities and equipment adaptations are made as needed. Services and facilities modifications are coordinated with occupational instruction and results are assessed continuously.

Poor—No support services or facilities and equipment modifications are available for handicapped students enrolled in this program.

17. Efforts to Achieve Sex Equity — 17

Excellent—Emphasis is given to eliminating sex bias and sex stereotyping in this program: staffing, student recruitment, program advisement, and career counseling; access to and acceptance in programs; selection of curricular materials; instruction; job development and placement.

Poor—Almost no attention is directed toward achieving sex equity in this program.

18. Provision for Program Advisement — 18

Excellent—Instructors or other qualified personnel advise students (day, evening, weekend) on program and course selection. Registration procedures facilitate course selection and sequencing.

Poor—Instructors make no provision for advising students on course and program selection.

19. Provision for Career Planning and Guidance — 19

Excellent—Day, evening, and weekend students in this program have ready access to career planning and guidance services.

Poor—Little or no provision is made for career planning and guidance services for students enrolled in this program.

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

		Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
PROCESSES (Continued)									
20. Adequacy of Career Planning and Guidance *Excellent*—Instructors or other qualified personnel providing career planning and guidance services have current and relevant occupational knowledge and use a variety of resources (such as printed materials, audiovisuals, job observation) to meet individual student career objectives. *Poor*—Career planning and guidance services are ineffective and staffed with personnel who have little occupational knowledge.	20								
21. Provision for Employability Information. *Excellent*—This program includes information which is valuable to students as employees (on such topics as employment opportunities and future potential, starting salary, benefits, responsibilities and rights). *Poor*—Almost no emphasis is placed on providing information important to students as employees.	21								
22. Placement Effectiveness for Students in this Program *Excellent*—The college has an effectively functioning system for locating jobs and coordinating placement for students in this program. *Poor*—The college has no system or an ineffective system for locating jobs and coordinating placement for occupational students enrolled in this program.	22								
23. Student Follow-up System *Excellent*—Success and failure of program leavers and completers are assessed through periodic follow-up studies. Information learned is made available to instructors, students, advisory committee members and others concerned (such as counselors) and is used to modify this program. *Poor*—No effort is made to follow up former students of this program.	23								
24. Promotion of this Occupational Program *Excellent*—An active and organized effort is made to inform the public and its representatives (such as news media, legislators, board, business community) of the importance of providing effective and comprehensive occupational education and specific training for this occupation to gain community support. *Poor*—There is no organized public information effort for this program.	24								
RESOURCES									
25. Provision for Leadership and Coordination *Excellent*—Responsibility, authority, and accountability for this program are clearly identified and assigned. Administrative effectiveness is achieved in planning, managing, and evaluating this program. *Poor*—There are no clearly defined lines of responsibility, authority, and accountability for this program.	25								

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

RESOURCES (Continued)

Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)
26. Qualifications of Administrators and/or Supervisors 26 *Excellent*—All persons responsible for directing and coordinating this program demonstrate a high level of administrative ability. They are knowledgeable in and committed to occupational education. *Poor*—Persons responsible for directing and coordinating this program have little administrative training, education, and experience.							
27. Instructional Staffing 27 *Excellent*—Instructional staffing for this program is sufficient to permit optimum program effectiveness (such as through enabling instructors to meet individual student needs, providing liaison with advisory committees, and assisting with placement and follow-up activities). *Poor*—Staffing is inadequate to meet the needs of this program effectively.							
28. Qualifications of Instructional Staff 28 *Excellent*—Instructors in this program have two or more years in relevant employment experience, have kept current in their field, and have developed and maintained a high level of teaching competence. *Poor*—Few instructors in this program have relevant employment experience or current competence in their field.							
29. Professional Development Opportunities 29 *Excellent*—The college encourages and supports the continuing professional development of faculty through such opportunities as conference attendance, curriculum development, work experience. *Poor*—The college does not encourage or support professional development of faculty.							
30. Use of Instructional Support Staff 30 *Excellent*—Paraprofessionals (such as aides, laboratory assistants) are used when appropriate to provide classroom help to students and to ensure maximum effectiveness of instructors in the program. *Poor*—Little use is made of instructional support staff in this program.							
31. Use of Clerical Support Staff 31 *Excellent*—Office and clerical assistance is available to instructors in this program and used to ensure maximum effectiveness of instructors. *Poor*—Little or no office and clerical assistance is available to instructors; ineffective use is made of clerical support staff.							
32. Adequacy and Availability of Instructional Equipment. 32 *Excellent*—Equipment used on or off campus for this program is current, representative of that used on jobs for which students are being trained, and in sufficient supply to meet the needs of students. *Poor*—Equipment for this program is outmoded and in insufficient quantity to support quality instruction.							

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Keypunch Instructions	Poor 1	Below Expectations 2	Acceptable 3	Good 4	Excellent 5	Don't Know	COMMENTS (Please note explanatory remarks or needs for improvement)

RESOURCES (Continued)

33. Maintenance and Safety of Instructional Equipment — 33

Excellent—Equipment used for this program is operational, safe, and well maintained.
Poor—Equipment used for this program is often not operable and is unsafe.

34. Adequacy of Instructional Facilities — 34

Excellent—Instructional facilities (excluding equipment) meet the program objectives and student needs, are functional and provide maximum flexibility and safe working conditions.
Poor—Facilities for this program generally are restrictive, disfunctional, or overcrowded.

35. Scheduling of Instructional Facilities — 35

Excellent—Scheduling of facilities and equipment for this program is planned to maximize use and be consistent with quality instruction.
Poor—Facilities and equipment for this program are significantly under- or over-scheduled.

36. Adequacy and Availability of Instructional Materials and Supplies — 36

Excellent—Instructional materials and supplies are readily available and in sufficient quantity to support quality instruction.
Poor—Materials and supplies in this program are limited in amount, generally outdated, and lack relevance to program and student needs.

37. Adequacy and Availability of Learning Resources — 37

Excellent—Learning resources for this program are available and accessible to students, current and relevant to the occupation, and selected to avoid sex bias and stereotyping.
Poor—Learning resources for this program are outdated, limited in quantity, and lack relevance to the occupation.

38. Use of Advisory Committees — 38

Excellent—The advisory committee for this program is active and representative of the occupation.
Poor—The advisory committee for this program is not representative of the occupation and rarely meets.

39. Provisions in Current Operating Budget — 39

Excellent—Adequate funds are allocated in the college operating budget to support achievement of approved program objectives. Allocations are planned to consider instructor budget input.
Poor—Funds provided are seriously inadequate in relation to approved objectives for this program.

40. Provisions in Capital Outlay Budget for Equipment — 40

Excellent—Funds are allocated in a planned effort to provide for needed new equipment and for equipment replacement and repair, consistent with the objectives for this program and based on instructor input.
Poor—Equipment needs in this program are almost totally unmet in the capital outlay budget.

PROE

Michigan Community Colleges

FACULTY PERCEPTIONS OF OCCUPATIONAL EDUCATION PROGRAMS

Please answer the following: (Use back of page and extra sheets if necessary).

1. What are the chief occupational education strengths of your program?

2. What are the major needs for improvement in your program and what action is required to achieve these improvements?

PLEASE IDENTIFY THE POSITION OF THE PERSON COMPLETING THIS FORM AND THE OCCUPATIONAL PROG (such as registered nursing, data processing).

Check One:

Division/Department Chair _____

Faculty _____

Counselor _____

Other, please specify: _____ _____

Program:

_____

SECTION 6

Summary of the Automotive Service Advisory Committee Survey

1. **The Advisory Committee meets often enough.**

   The majority of the respondents were neutral to moderately agree. With 10 neutral responses it might suggest that there may be some concerns that were not brought out. The comments would also suggest this may be true.

2. **The Auto Service Program provides students with practical job application experience.**

   Moderately agree to strongly agree was the consensus here. Comments were varied; some stressed teaching concepts not name plates, while others suggested giving the students more realistic service floor experience.

3. **The employment prospects for Automotive Service graduates are favorable upon completion of the program.**

   All agreed that graduates are in great demand upon completion of the program.

4. **The Advisory Committee members are knowledgeable about the Auto Service Program.**

   Most moderately agreed with 9 marks in this category followed by 6 for strongly agree. Only 3 were neutral.

5. **The physical facilities are adequate to support quality instruction.**

   Again, most moderately agreed. More hoists would be helpful.

6. **The instructional equipment used is current and representative of what graduates will use on the job.**

   Most respondents were neutral to moderately agree. However, the comments would suggest that the equipment is an unknown to most of the members. Some reserved comment until they see the equipment.

7. **Classes are reviewed and revised to keep current with changing job practices and technology.**

   The overwhelming majority was in the moderately agree column. Some comments, though, suggest otherwise. Perhaps some follow-up could be done.

8. **The Advisory Committee is adequately utilized by the program.**

Most responses were neutral on this one, followed by moderately agree. It seems that some are really unsure of what is changed and why. This should be more closely examined.

9. **Suggestions from the Advisory Committee are encouraged and adopted by the program.**

Again, the majority was neutral on this one too. Comments tended to be less than favorable. It seems that the committee is unaware if changes are made and why.

10. **Long-term employment prospects remain extensive.**

Overwhelmingly strongly agree. All graduates will find that they are in demand in a number of ways.

11. **From your perspective, what are the major strengths and weaknesses of the Automotive Service program at FSU?**

We had numerous comments on this one. The program is facing competition from other schools. Ferris still has the best program of this kind around. Still need to be involved with the industry to produce the product that employers are looking for. Overall, the respondents were pleased with the progress Ferris has made in keeping this program strong.

ADVISORY MEMBER

AUTO SERVICE ADVISORY - 10/96	Strongly Agree		Neutral		Strongly Disagree	TOTAL
	1	2	3	4	5	
1. The Advisory Committee meets often enough.	2	5	10	1		18
2. The Auto Service Program provides students with practical job application experience.	6	9	2	1		18
3. The employment prospects for Auto Service graduates for favorable upon completion of the program.	14	4				18
4. The Advisory Committee members are knowledgeable about the Automotive Service program.	6	9	3			18
5. The physical facilities are adequate to support quality instruction. about the Automotive Service program.	5	9	4			18
6. The instructional equipment used is current and representative of what graduates will use on the job.	4	7	8			19
7. Classes are reviewed and revised to keep current with changing job practices and technology.	3	11	4			18
8. The Advisory Committee is adequately utilized by the program.	2	6	10			18
9. Suggestions from the Advisory Committee are encouraged and adopted by the program.	3	3	9			15
10. Long term employment prospects remain extensive.	10	2	1			13
11. From your perspective, what are the major strengths and weaknesses of the Automotive Service program at FSU.						
TOTAL	55	65	51	2		173

ADVISORY COMMITTEE SURVEY COMMENTS

Question 1. The Advisory Committee meets often enough.
Comments:

1. Not sure when committee meets. Not aware.
2. Once or at most, twice a year should be enough.
3. Whatever it takes to meet the needs of the university should dictate frequency.
4. Meeting should be held every couple of years, that way ideas or suggestions could be addressed more frequently.
5. You gentlemen know the education business best...we are forced to change with technology very rapidly.

Question 2. The Automotive Service Program provides students with practical job application experience.
Comments:

1. They need to understand theory for diagnostics. But practical field procedures need work. stress concepts, not name plates.
2. Only complaints are training for other than "Big Three".
3. Need to give them more responsibility on the floor. Needs to be a bit more realistic.
4. Provided they get the hands on experience at the supporting repair facility.

Question 3. The employment prospects for Automotive Service graduates are favorable upon completion of the program.
Comments:

1. There is a serious shortage of technicians. Graduates need to understand that they are entry level and the education process is not over.
2. There is a huge demand for trained technicians.
3. Once an employer becomes familiar with Ferris grads, they tend to seek them out.

Question 4. The Advisory Committee members are knowledgeable about the Automotive Service Program.
Comments:

1. Don't know.
2. Most are alumni.
3. I think there is a good cross section of committee members.
4. I continue to be impressed, especially with former grads and people with hands on experience.

Question 5. The physical facilities are adequate to support quality instruction.

Comments:

1. Don't know.

2. More hoists would aid and speed up learning. Jackstands are used today, but our grads usually hire in at better facilities that have hoists.
3. Bit on the small side and definitely should retain Auto Machine.
4. Some are, some aren't - depending upon size and available tools and equipment.

Question 6. The instructional equipment used is current and representative of what graduates will use on the job.

Comments:
1. Don't know.
2. Not sure, haven't seen all equipment. Some appears to be outdated. Equipment seems to be adequate enough to learn on.
3. Need to review equipment in classrooms and shop areas before comment can be made.
4. No, but as each franchise has its own proprietary diagnostic equipment, this will be hard
to overcome.
5. I don't have much knowledge of the equipment being used now.
6. In some cases its hard for us dealers to keep up.

Question 7. Classes are reviewed and revised to keep current with changing job practices and technology.
Comments:
1. Don't know.
2. Constant input from the field is important. This industry is changing constantly. Apprentice programs are being considered.
3. Would have to review content.
4. I do not know if or how the classes are reviewed or by whom, I assume they are reviewed
regularly; the ASSET program is top notch and assume revisions are done when necessary.

Question 8. The Advisory Committee is adequately utilized by the program.

Comments:
1. Don't know.
2. I don't think the classes are updated and reviewed often enough and changes made.
3. Possible review of class content that traditionally change rapidly.
4. I would like to be told exactly what changes are made as a result of our recommendations, and also have it explained why some are not acted on.

Question 9. Suggestions from the Advisory Committee are encouraged and adopted by the program.

Comments:

1. Don't know.
2. Encouraged yes, adopted not sure. Some instructors resist our suggestions and defend their positions. Not objective enough.
3. The easy changes are adopted, but some suggestions that are made are not used because they are preconceived as being too difficult.
4. We only have administration's response. We still hear the same or similar comments from the student body.

Question 10. Long term employment prospects remain extensive.

Comments:

1. There is a serious shortage of technicians.
2. I wish I could hire more myself. I now have three grads here.

Question 11. From your perspective, what are the major strengths and weaknesses of the Automotive Service program at Ferris State University.

Comments:

1. The Auto Service program is facing stiff competition from schools that offer job skills only. What about offering continuing education classes like other industries offer? Instructors appear to be genuinely concerned for program. Do they have continuing education? Keep soliciting input from the field!
2. The ASEP program is outstanding!
3. Major strengths lie in theory and hands-on practical applications. The staff has and should always be the best we can get. Our only weak points are maintaining enrollment and update of equipment ($).
4. It's the best form of Automotive Technology training in the market today. Keep up the good work.
5. Skilled automotive technicians with strong diagnostic training in high-tech electronic systems will continue to be in great demand in the automotive industry.
6. Positive: Very technically oriented, good instructors. Negative: Training is generic in scope -- hard to give specialized training in any one product line. Current class length not conducive to effectively teaching the course material.
7. ASE certification of instructors.
8. I think you need to have an area where students remove the assembly for the repair. All the training is on the work bench not on or removing from the automobile.
9. I think Ferris has an overall very good program. I also feel that graduates expect higher starting pay than they actually get because the programs tell them graduates make a lot of money. It take years of experience for an auto person to make a good living.

10. System seems to be one of the best I have ever been in.
11. ASE certification, GM standards met. On target info. and systems experience.
12. Need more input from industry to update job input into program "what industry is looking for".

FERRIS STATE UNIVERSITY

October 9, 1996

Dear Automotive Service Advisory Committee Member:

All programs at Ferris State University are reviewed every five years. We are in the process of that review at this time for the Automotive Service Technology program. Your responses and comments are important for the continued success and enhancement of this program. Please complete and return the survey in the enclosed self addressed envelope. Your continued support of the Automotive Service Technology program at Ferris State University is very much appreciated. If you have any questions please call Greg Key, Professor, Automotive Center at (616) 592-2358.

1. The Advisory Committee meets often enough.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

2. The Automotive Service Program provides students with practical job application experience.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

3. The employment prospects for Automotive Service graduates are favorable upon completion of the program.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

4. The Advisory Committee members are knowledgeable about the Automotive Service program.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

5. The physical facilities are adequate to support quality instruction.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

6. The instructional equipment used is current and representative of what graduates will use on the job.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

7. Classes are reviewed and revised to keep current with changing job practices and technology.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

8. The Advisory Committee is adequately utilized by the program.

Classes are reviewed and revised to keep current with changing job practices and technology.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

9. Suggestions from the Advisory Committee are encouraged and adopted by the program.

Classes are reviewed and revised to keep current with changing job practices and technology.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

10. Long term employment prospects remain extensive.

Strongly Agree		Neutral		Strongly Disagree
1	2	3	4	5
☐	☐	☐	☐	☐

Comments:_____

_____

11. From your perspective, what are the major strengths and weaknesses of the Automotive Service program at Ferris State University.

_____

_____

_____

_____

_____

Advcom.svy

SECTION 7

All information is from the Michigan Occupational Information System (MOIS). Employment outlook for the state is a projected yearly job openings of 950. The growth is expected to be 9% to the year 2005. The total number of technicians working in the state is 27,000.

POSTSECONDARY PROGRAMS

AUTOMOTIVE TECHNOLOGY

Programs in Automotive Technology provide opportunities to gain the knowledge and skills necessary for employment repairing and maintaining cars, trucks, and buses. Individuals who teach Automotive Technology at the secondary school level must have a Michigan Teaching Certificate.

Courses will vary from school to school but may include:

Shop Math
Basic Electricity
Electrical Circuits
Engineering Service Methods
Suspension Systems
Air Conditioning Service
Auto Body Repair (Paints & Painting Technology, Auto Body/Frame Repair)
Auto Transmission Service
Public Relations

APPRENTICESHIP OPPORTUNTIES

AUTO MECHANIC

Some people enter occupations within this MOIScript through an apprenticeship program. An apprenticeship program is a formal program that takes 3 - 5 years to complete with most of the time spent on the job.

WHAT IS LEARNED ON THE JOB

Tool Care
Shop Regulations
Routine Show Work
Custom Relations
Clutch & Transmission
Chassis & Rear Axle Assembly
Brakes (Inspection/Adjustment/Repair)
Electrical System (Lights/Generator)
Engine Repair (Valves/Timing/Gears)
Lubrication of the entire Automobile
Motor Analysis (carburetors/trouble shooting/tune-up)

WHAT IS LEARNED IN THE CLASSROOM

Chassis & Brakes
Safety Practices
Electrical Systems
Carburetors & Emissions
Drive Lines (gear/torque converter/rear axles)
Tune-ups (use of equipment)
Engine Repair (Valves & Cylinders)
Control (Fuel Tank Gages/Line/Cylinders)
Climate Control (Cooling Systems/Heaters)

MILITARY TRAINING PROGRAMS

AUTOMOBILE MECHANICS

Jeeps, autos, and light trucks are used by the military to move troops and supplies. Jeeps fitted with guns and armor plate are also used as attack vehicles. Automobile mechanics maintain and repair automotive vehicles, such as jeeps, cars, and light trucks.

What They Do

Automobile mechanics in the military perform some or all of the following duties:

* Troubleshoot problems in vehicle engines, electrical systems, steering, brakes, and suspensions.
* Tune and repair engines using engine test equipment.
* Replace clutches, brakes, transmissions, and steering assemblies.
* Repair auto pollution control equipment.
* Replace starters, water pumps, and fuel pumps.
* Establish and follow schedules for maintaining vehicles.
* Keep records of repairs made and parts used.

Work Environment

Auto mechanics usually work inside large repair garages. They work outdoors when making repairs in the field.

Physical Demands

Normal color vision is required for some specialties to work with color-coded wiring and to read diagrams.

Training Provided

Job training consists of 8 to 12 weeks of classroom instruction, including practice in repairing motor vehicles. Long training is necessary for specialties. Course content typically includes:

* Tune-up of diesel and gasoline engines.
* Troubleshooting mechanical and electrical problems.
* Use of manuals and repair diagrams.
* Record keeping.

Further training occurs on the job and through advanced courses. The Army, Navy, and Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

Helpful Attributes

Helpful school subject include auto mechanics and industrial arts. Helpful attributes include:

* Preference for physical work.
* Interest in troubleshoooting mechanical problems.
* Interest in automobile engines and how they work.

Civilian Counterparts

Civilian automobile mechanics work for service stations, repair garages, and auto dealers. They perform duties similar to military automobile mechanics. Civilian mechanics, carburetor mechanics, transmission mechanics, or radiator mechanics, depending on their specialty.

Opportunities

The services have about 37,000 automobile mechanics. On average, they need about 5,700 new mechanics each year. After job training, automobile mechanics repair vehicles under the direction of supervisors. With experience, they work more independently and are given more challenging repair problems. In time, automobile mechanics may advance to manage motor pools or maintenance units.

OPPORTUNITIES FOR EXPERIENCE AND METHODS OF ENTRY

Many gas stations, small repair shops, and car dealers hire part-time Mechanics. Practical experience in auto repair may be gained from military service, an apprenticeship, or working on cars as a hobby. Secondary vocational education programs in auto mechanics, mechanics cluster, transportation services and technology, and heating/air/refrigeration mechanics, as well as postsecondary programs in auto technology, may offer co-op or work experience opportunities.

School-To-Work Opportunities include:

Informal Apprenticeships

Mentorships

Job Shadowing Experiences

Touring a Local Auto Mechanic Employer

Internships

Volunteer Work with an Auto Mechanic Employer

Community Service Work with an Agency

The most common method of entry is direct application to auto dealerships, service stations, independent repair shops, bus companies, and other employers. Employers, local unions, and Michigan Employment Security Commission full-service branch offices have information on apprenticeship opportunities. Openings may be found through school placement offices and newspaper want ads.

EARNINGS AND ADVANCEMENT

Mechanics in repair shops may be paid a percentage of labor charges for repairs they make or a flat rate minimum. Skilled mechanics usually earn between 2 to 3 times as much as inexperienced helpers and trainees.

Nationally, according to one survey in 1993, it has been estimated that auto mechanics earned an average annual salary of $29,305. Earnings were highest in dealerships and fleet services.

Auto mechanics in Michigan, earned an average annual income between $21,096 and $33,252 (1994).

In Michigan, hourly wage rates (1993) for Mechanics were:

Area	Average	Middle Range
Battle Creek	$16.96	$12.75 - $19.94
Ann Arbor (1993)	$18.49	$16.70 - $19.80

According to a dealership survey, most auto mechanics and auto service technicians employed by auto dealerships in Michigan had an average annual income (late 1993) of $30,253 or $14.54 per hour. Highly experienced mechanics usually earned much more. Apprentices earned from about $6.22 to $11.32 per hour.

Transportation maintenance workers employed by the State of Michigan in 1994 earned between $9.99 and $15.54 per hour, depending on experience and level of responsibility. Supervisors earned between $13.28 and $23.44 per hour.

The 1992 graduates of high school vocational education programs in Michigan who worked in jobs related to this occupation earned a beginning average of $6.15 per hour in 1993.

Depending on their employer, auto mechanics may receive 1 and 1/2 or 2 times their basic rate for overtime.

Mechanics may receive paid vacations and holidays, life, dental, and health insurance, uniforms, and retirement plans. Benefits are usually paid for, at least in part, by the employer.

Capable mechanics advance to become supervisors and service managers. Many open their own automotive service stations, specialty repair shops, or parts stores. Some operate new or used car dealerships along with service and repair operations.

EMPLOYMENT AND OUTLOOK

Nationally, there were about 739,300 Auto mechanics employed in 1992. Employment is expected to grow about as fast as the average for all occupations through the year 2005. About 25.1% of them were self-employed. The industry distribution for this occupation looked like this:

Industry	% Employed
Wholesale and Retail Trade	59.7
Services	26.8
Government	6.5
Other	7.0

There are a growing number of vehicle registrations and an aging fleet. These factors will mean more work for auto mechanics because of the increasing number of cars and the growing number of older cars on the road.

There were about 27,000 auto mechanics employed in Michigan in 1992. Most worked in wholesale and retail trade industry. Some Auto Mechanics were self-employed.

According to the 1990 Census, 4.1% of this occupation were female, 9.9% were Black and 1.5% were persons of Hispanic origin.

Employment of auto mechanics is expected to increase more slowly than the average for all occupations through the year 2005. An average of 950 openings is expected annually, with 190 due to growth and 760 to replacement of those who retire or leave the labor force for other reasons. Additional openings will occur as workers change jobs or occupations. In late 1993, there were 68 apprentices in training for this occupation, and 6 completed the apprentice program during the prior 12 months.

The employment of auto mechanics is expected to be affected by at least two factors. The first factor is the attempt by auto manufacturers in recent years to eliminate the need for some auto maintenance work and to increase the service schedules for other maintenance work.

The second factor is the complexity of the more fuel-efficient car models. These models have computerized engine controls, anti-lock brake systems, electronic instrument panels, power-boosting turbochargers and/or new transmission and suspension systems. Opportunities will be best for auto mechanics who have good electrical and electronics backgrounds and who have factory-supplied training from auto manufacturers or an associate degree in automotive technology.

MICHIGAN'S EMPLOYMENT OUTLOOK TO 2005

Employment & Outlook Regions	# Employed	% Growth	Projected Yearly Job Openings
State Total	27,000	9.0%	950

SUCCESS OF ADDITIONAL INFORMATION

Printed Occupational Information is available upon written request from sources marked with an asterisk (*) below:

Michigan Automobile Dealers Association Association
1500 Kendale Boulevard
P.O. Box 2525
East Lansing, MI 48826

*Automotive Service Industry Association
444 N. Michigan Avenue
Chicago, IL 60611

*Michigan Department of State Association
Bureau of Automotive Regulation
Repair Facility Division
208 N. Capitol, Mutual Building
Lansing, MI 48918

*Automotive Service Councils of Michigan
27581 Schooolcraft
Livonia, MI 48150

A Local Office of the Michigan Employment Security Commission.
Offices.

*Motor Vehicle Manufacturers

Educational Programs
300 New Center Building
Detroit, MI 48202

*Automotive Service Association
P.O. Box 929
Bedford, TX 76095

*National Automobile Dealers

8400 Westpark Drive
McLean, VA 22102

*U.S. Department of Labor
Bureau of Apprenticeship & Training
State Director's Office
801 S. Waverly, Suite 304
Lansing, MI 48917

Federal, State & Local Civil Service

University of Michigan
/Michigan Schools which offer: AUTO BODY REPAIR
Delta College
Ferris State University
Grand Rapids Community College
Highland Park Community College
Jackson Community College
Kalamazoo Valley Community College
Kellogg Community College
Kirtland Community College
Lansing Community College
Macomb Community College
Mid Michigan Community College
Monroe County Community College
Montcalm Community College
Muskegon Community College
Oakland Community College
St. Clair County Community College
Schoolcraft College
Southwestern Michigan College
Washtenaw Community College
Wayne County Community College
West Shore Community College
/Michigan Schools which offer: AUTOMOTIVE TECHNOLOGY
Alpena Community College
Andrews University
Bay de Noc Community College
Central Michigan University
Charles Stewart Mott Community College
Delta College
Ferris State University
Gogebic Community College
Grand Rapids Community College
Henry Ford Community College
Highland Park Community College
Jackson Community College
Kalamazoo Valley Community College
Kellogg Community College
Kirtland Community College
Lansing Community College
Macomb Community College
Mid Michigan Community College
Monroe County Community College
Montcalm Community College
Muskegon Community College
Northern Michigan University
Northwestern Michigan College
Oakland Community College
Southwestern Michigan College
Washtenaw Community College
Wayne County Community College
Western Michigan University
West Shore Community College
/Michigan Schools which offer: AVIATION TECHNOLOGY
Andrews University
Baker College of Flint
Baker College of Muskegon
Baker College of Owosso
Eastern Michigan University
Jackson Community College

SECTION 8

Facilities

The Automotive Service Technology program started in 1952 in a wing of the Trade and Industrial Center on the Ferris State University campus. When the program began, it occupied approximately 10,600 sq. ft. There was one faculty member and 20 students. The Automotive Service Technology program was the parent program for all the other programs in the Automotive and Heavy Equipment department.

Presently the Automotive Service Technology program occupies approximately 57,000 sq.ft. in the Automotive Center building. This facility had a major remodel in 1988 to better accommodate the automotive programs.

One of the major features of the Automotive Service Technology program at Ferris State University is the service floor operation. This 13,300 sq.ft. service shop is designed to operate much like a dealership service department. The vehicles that are worked on in this shop are mainly provided by service customers and the work is done by automotive students and supervised by the faculty.

Technological Equipment/Computers in the AST Program ALUMNI survey (Questions 12 and 13)

Over 64% (33/52) of the respondents said that the technological equipment used in their courses was up to date. Several commented that they found even newer equipment on the job, but that their experience with AST Program equipment had prepared them for this. Only 2/47 respondents answered no to this question.

Nearly 60% (27/47) of the respondents said that the computers they used and the computer skills they developed during the AST Program were useful in their jobs. the major concerns were on keeping the programs current--especially campus-wide use of Windows, CD ROM manuals--and requiring computer courses for the two-year program.
Only 3/47 answered no to this question.

The technological/computer equipment used in the AST Program is useful to its graduates' careers, but will need to keep-up with the new programs developed in the automotive service field.

A partial list of tools and manuals along with our vehicle list shows the corporate commitment to the program through equipment donations. For example, this year Chrysler donated $15,000 of Miller tools to the program.

Presently 32 of our 60 vehicles are only one year old the rest are only a couple years old. The list of vehicles illustrates how we rate them for educational use such as air, cruise, engine, transmission, etc. We replace the oldest first unless the vehicle has some special system on it that we have very few of. That vehicle may be a year of two older because it might be harder to replace that particular type of vehicle.

We have four state of the art computer manuals; one each from G.M., Ford, and Chrysler, and an All Data system for all other car lines. A long with the computer systems we have a paper manual system as well.

Our computers are up dated every two weeks with CD ROMs that are sent to us from the corporations. In-between the two weeks we can call over the phone lines using our corporate computers to connect with a dialer main frame. If there is any additional information to help us diagnose a problem we have access to even if it can't be released in printed form due to legal issues.

FSU Automotive Department
Demo Car List Revised 12/2/96

FSU#; Yr.; Mfgr.; Model	Engine	Trans	ABS	Elec. Dash	Cruise	Auto A/C	SRS
AT #1 1995 Chevy Corvette (red)	5.7L	6 spd.	N	YES	yes	yes	yes
AT #2 1991 Lincoln Towncar (light blue)	4.6L	AXOD	Yes	No	Yes	ACC	Yes
AT #3 1995 Neon Plymouth (white)	2.0L	5spd	No	No	No	Air	Yes
AT #4 1996 T-Bird (black)							
AT #5 1992 Ford Ranger 4X4 (red/silver)	4.0L	AXOD		No		Air	No
AT #6 1993 Olds Bravada (Green)	4.3L	ATOD	No	No	Yes	Air	No
AT #7 Chevy truck (green)	5.7L	AOD	Yes	No	Yes	Air	Yes
AT #8 1990 Chrysler Van Voyager (black)				No	Yes	Air	No
AT #9 1995 Caravan (blue)	3.3L	4spd	Yes	No	Yes	Air	Yes
At #10 1995 Mercury Grand Marq	4.6L	AODE	Yes	No	Yes	Air	Yes
AT #11 1996 GEO Metro							
AT #12 Red 94 Blazer	4.3	4spd	Y	Yes	Yes	Yes	No
AT #13 1993 Camaro Z-28	5.7L	Man6	Yes	No	Yes	No	Yes
AT #14 1992 Chev. Astro Van (red)	4.3L		Yes	No	No	Air	No
AT #15 1992 S-10 Blazer (black/red)	4.3L		Yes	Yes	Yes	Air	No
AT #16 1991 Ford Taurus (blue)	3.0L	AXOD					Yes
AT #17 1996 GEO Tracker							
AT #18 1993 Buick Regal (blue)	3800		Yes	Yes	Yes	Air	No
AT #19 1993 Lincoln Mark VIII (white)	4.6L	AODEN	Yes	No	Yes	Yes	Yes
AT #20 1991 Pontiac Sunbird (white)	2.0L						No
AT #21 1995 Ford Windstar (lt. blue)	3.8L	ATOD	No	No	Yes	Air	Yes

AT #22 1996 Ford Contour (black)							
AT #23 1991 Cadillac Touring sedan (black)	4.9L		Yes				Yes
AT #24 1996 Ford E150 Van (Red)	S T O	R A	G E		VEHI-	CLE	
AT #25 1993 GEO Storm (purple)	1.6L		No	No	No	No	No
AT #26 1991 Chev. Caprice wagon (dark red)	5.0L		Yes				Yes
AT #27 1994 Saturn (maroon)	1.9 OHC		Yes	No	Yes	X	Yes
AT #28 1996 Dodge 3500 Maxi Van Silver/White							
AT #29 1993 Cadillac Alante (black) N.star	4.6L		Yes	Yes	Yes	ECC	Yes
AT #30 1996 Cyrsler Mini Van (teal)							
AT #31 1994 Saturn (red)	1.9 DOHC		Yes	No	Yes	No	Yes
AT #32 1991 Olds Cutlass Supreme (red)				Yes	Yes	ECC	No
AT #33 1996 Ranger 4X2 (green)	4.0L		No	No	Yes	No	No
AT #34 1993 Cadillac Deville (blue)	4.9L		Yes	No	Yes	Air	No
AT #35 1995 Ford Escort (white)	1.8	Auto	No	No	No	No	No
AT #36 1996 Ford E250 Diesel Van	7.3 DIT						
AT #37 1996 Ford Taurus (red)							
AT #38 1994 Ford Escort (white)	1.9L		No	No	No	No	Yes
AT #39 1989 Ford Thunderbird (white) super coupe	3.8L	AOD	Yes	No	Yes	Air	No
AT #40 1994 Olds Ciera (lt.blue)	3.1L	Auto-4	Yes	No	Yes	No	Yes
AT #41 1995 Mercury Villager (grey)	3.0L	ATOD	Yes	No	Yes	Air	Yes

AT #42							
AT #43 1996 Ford Crown Victoria (burgandy)							
AT #44 1996 Ford Explorer (green)	4.0L	Auto	Yes	No	Yes	Air	Yes
AT #45 1996 Ford F150 (grey/black)	4.6L	Auto	Yes	No	Yes	Air	Yes
AT #46 GM Lumina (black)	3100	5-spd	Yes	Yes	Yes	Air	Yes
AT #47 1995 Lincoln Continental (green)	4.6L	ATOD	Yes	Yes	Yes	Air	Yes
AT #48 1995 Mercury Mystique (white)	2.0L	AUTO	Yes	No	Yes	Air	Yes
AT #49 1994 Mercury Cougar (aqua)	3.8L	4-auto	Yes	No	Yes	No	Yes
AT #50 1996 Chevrolet Truck (white)	4.3L	4-auto	Yes	No	Yes	Air	Yes
AT #51 1995 Ford Taurus (red)	3.0L		No	No	Yes	No	Yes
AT #52 1995 Chrysler MiniVan (silver)							
AT #53 1991 Reatta (white) **Designated AT 217**	3800		Yes				Yes
AT #54 1996 Ford Mustang (White)	3.8L	Auto	Yes	No	Yes	Air	Yes
AT #55 1995 Chevrolet Suburban (red & black)	6.5l	4spd auto	Yes	No	Yes	Yes	No
AT #56 Buick Park Avenue (white)	3.8l	4spd auto	Yes	No	Yes	Yes	Yes
AT #57 1995 Buick Le Sabre (Champagne)	3.8l	4spd auto	Yes	No	Yes	Yes	Yes
AT #58 1995 Ford Probe (White)		5-spd	No	No	Yes	Air	Yes
AT #59 1996 Skylark (Burgundy)	3.L	4spd auto	Yes	No	Yes	Yes	?
AT #60 Saturn (white)	1.9L	5spd Std.	Yes	No	Yes	Yes	No
AT #87 1994 Astro Van (blue)	4.3L	4-spd. Auto	Yes	No	Yes	No	Yes

FERRIS STATE UNIVERSITY

Memorandum

To: *Automotive Center Faculty*

From: *Mike Hachman*

Subj: *SPECIAL TOOLS FROM CHRYSLER CORPORATION*

Date: *11/13/96*

We have recently received over $15,000 worth of ***Miller Special Tools****.*

The attached list is an inventory of those tools. All of these tools are available for your classes -- if you need them let me know. Thanks.

MH:j

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

ESSENTIAL SPECIAL TOOLS '94-'96
GROUP 1 & 2 DEALERS
NEW C/P/D/T/J/E DEALER
KIT NUMBER 6664-396

TOOL NO.	DESCRIPTION	DLR. COST	QTY	AMOUNT
0938	BRIDGE, BRG. SPLITTER	$93.49	1	$93.49
1130	SPLITTER, BEARING	$47.14	1	$47.14
5041	INSTALLER, SEAL AXLE	$21.50	1	$21.50
5041-44	INSTALLER, SEAL AXLE	$6.51	1	$6.51
5041-60	INSTALLER, SEAL AXLE	$8.07	1	$8.07
5041-7	INSTALLER, SEAL AXLE	$6.51	1	$6.51
5048	PULLER SET, BEARING	$79.50	1	$79.50
5049A	REMOVER/INSTALLER	$47.50	1	$47.50
5050A	INSTALLER, BEARING	$21.00	1	$21.00
5052	INSTALLER, BEARING	$11.25	1	$11.25
5058A	COMPRESSOR, SPRING	$30.90	1	$30.90
5059-A	COMPRESSOR, SPRING	$18.50	1	$18.50
5061	INSTALLER	$11.75	1	$11.75
5062	INSTALLER	$10.85	1	$10.85
5063	INSTALLER	$8.25	1	$8.25
5064	INSTALLER	$11.40	1	$11.40
5065	INSTALLER	$8.10	1	$8.10
5066	INSTALLER, BUSHING/BRG.	$7.85	1	$7.85
5067	INSTALLER	$19.75	1	$19.75
5069	FUEL PRESS. TEST KIT	$67.70	1	$67.70
6051	PLIER, SNAP RING	$26.45	1	$26.45
6052	INSTALLER	$12.50	1	$12.50
6053	INSTALLER	$12.35	1	$12.35
6055	THRUST BUTTON	$2.95	1	$2.95
6056	PLATE	$8.35	1	$8.35
6057	DISC, SPRING COMP.	$12.10	1	$12.10
6061	INSTALLER	$8.50	1	$8.50
6062A	REMOVER, BRG. CUP	$78.34	1	$78.34
6135	DOLLY	$121.55	1	$121.55
6139	ALIGNER & INSTALLER	$36.80	1	$36.80
6227	SP.COMPRESSOR/ALIGNER	$32.50	1	$32.50
6228	INSTALLER	$16.50	1	$16.50
6231	PROTECTOR, SEAL	$8.25	1	$8.25
6252	HOLDER, SHAFT	$7.90	1	$7.90
6259	HOLDER	$27.50	1	$27.50
6260	BOLTS	$1.25	1	$1.25
6261	INSTALLER	$22.50	1	$22.50
6268	TIP	$4.45	1	$4.45
6271A	INSTALLER, REAR SEAL	$59.70	1	$59.70
6272	INSTALLER, SEAL	$9.90	1	$9.90
6288	SERVICE KIT	$97.60	1	$97.60
6289	REMOVER/INSTALLER	$137.90	1	$137.90
6289-6	RECEIVER, BALL JOINT	$11.36	1	$11.36
6294	OVERHAUL KIT (AW 4)	$271.90	1	$271.90
6301	REMOVER/INSTALLER	$11.25	1	$11.25

6302	REMOVER/INSTALLER	$10.95	1	$10.95
6310	REMOVER/INSTALLER	$60.00	1	$60.00
6311	GAUGE BAR	$24.95	1	$24.95
6312	GAUGE	$10.25	1	$10.25
6341A	REMOVER, SEAL	$12.75	1	$12.75
6342	INSTALLER, SEAL	$6.60	1	$6.60
6343	PROTECTOR, SEAL	$3.35	1	$3.35
6366	RETRACTOR	$6.61	1	$6.61
6371	REMOVER, BEARING	$11.03	1	$11.03
6372	REMOVER/INSTALLER,PIN	$13.44	1	$13.44
6399	INSTALLER, BEARING	$6.51	1	$6.51
6412	ADAPTER FOOT	$15.71	1	$15.71
6436	INSTALLER	$7.35	1	$7.35
6437	INSTALLER	$6.93	1	$6.93
6441	WRENCH, SPLINED SOCKET	$14.60	1	$14.60
6442	WRENCH, SPLINED SOCKET	$15.23	1	$15.23
6443	WRENCH, 5TH GEAR NUT	$28.26	1	$28.26
6444	PULLER, BEARING/GEAR	$71.79	1	$71.79
6445	JAWS, BEARING	$23.53	1	$23.53
6446	INSTALLER, BRG./GEAR	$15.88	1	$15.88
6447	JAWS, BEARING	$23.42	1	$23.42
6448	INSTALLER, BEARING	$18.84	1	$18.84
6449	JAWS, BEARING	$23.63	1	$23.63
6451	JAWS, BEARING	$24.16	1	$24.16
6453	JAWS & INSERT	$22.16	1	$22.16
6454	REMOVER, BEARING	$3.57	1	$3.57
6456	REM./INST., BUSH.	$10.19	1	$10.19
6457	FITTING, AIR METERING	$1.85	2	$3.70
6459	JAWS, 5TH GEAR	$23.78	1	$23.78
6494	INSTALLER, BEARING CUP	$52.18	1	$52.18
6495	INSTALLER, BEARING CUP	$6.51	1	$6.51
6497	WRENCH, RETAINING NUT	$22.82	1	$22.82
6498	SOCKET, SPLINED	$6.95	1	$6.95
6502B	WRENCH, DIFF. NUT	$6.89	1	$6.89
6503	WRENCH, PRELOAD	$45.11	1	$45.11
6507	INSTALLER, SEAL	$15.13	1	$15.13
6508A	INSTALLER, SEAL	$19.33	1	$19.33
6514	REMOVER, BRG. CUP	$33.60	1	$33.60
6522	INST, BRG.CUP	$6.87	1	$6.87
6526	SPRING COMP. ADAPTER	$17.00	1	$17.00
6533	REM/INST, BEARING	$29.73	1	$29.73
6534	SOCKET, SPLINED**	$10.46	1	$10.46
6536-A	INST, BEARING/SEAL	$9.68	1	$9.68
6537	ADAPTER, COMPRESSOR	$4.66	1	$4.66
6539	ADAPTER, PRESS. PORT	$14.52	1	$14.52
6541	ADAPTER, PRESS. PORT	$8.60	1	$8.60
6545	COLLET, FOR 5048	$27.73	1	$27.73
6548	FORK, DIFF. TURNING	$15.65	1	$15.65
6549	GAUGE, SHIM SELECTION	$77.82	1	$77.82
6550	SPREADER, CHAIN	$17.12	1	$17.12
6551	REM/INST, SEAL	$9.14	1	$9.14
6552	PROTECTOR, SEAL	$3.68	1	$3.68

6558	REMOVER/INSTALL, SEAL	$8.17	1	$8.17
6560	INSTALLER, BRG. CUP	$18.28	1	$18.28
6567A	INSTALLER, SEAL	$53.30	1	$53.30
6568	SPANNER, DIFF. NUT	$19.96	1	$19.96
6577	REMOVER, BEARING	$76.83	1	$76.83
6583	RETAINER, DETENT BALL	$5.86	1	$5.86
6589	STAKER,TRANS.SHAFT NUT	$15.69	1	$15.69
6591	PROTECTOR, SEAL	$6.00	1	$6.00
6592	PROTECTOR, SEAL	$6.45	1	$6.45
6595	FIXTURE, SUPPORT	$34.62	1	$34.62
6596	REMOVER, BRG. CUP	$30.34	1	$30.34
6597	REMOVER, BRG. CUP	$3.42	1	$3.42
6599	PLATE, TEST	$10.34	1	$10.34
6602	REMOVER/INST. BUSH.	$36.76	1	$36.76
6607	WRENCH, ABS SOCKET	$9.98	1	$9.98
6616	REMOVER/INSTALLER	$78.63	1	$78.63
6618A	PLATE, SUPPORT	$17.54	1	$17.54
6631	ADAPTER, PRESS. PORT	$18.82	1	$18.82
6633	STUDS	$9.24	2	$18.48
6635A	ALIGNER/INSTALLER	$25.76	1	$25.76
6639	STAKER,OUTPT SHAFT NUT	$15.65	1	$15.65
6641	INSTALLER, SPROCKET	$3.03	1	$3.03
6642	BRACKET, ALIGNMENT	$4.73	2	$9.46
6644	PREOVER/INST, BUSHING	$15.15	1	$15.15
6668	ADAPTER, FUEL PRESSURE	$6.51	1	$6.51
6669	REMOVER, STUB SHAFT	$7.14	1	$7.14
6670	DEPRESSOR, BRAKE VALVE	$11.55	1	$11.55
6679	INSTALLER, CLAMP	$25.29	1	$25.29
6680	REMOVERS,ELEC.TERMINAL	$12.77	1	$12.77
6684	WRENCH, TRANSDUCER	$8.53	1	$8.53
6685	FIXTURE, LEAK-DOWN	$126.22	1	$126.22
6687	GUIDE, SEAL	$18.78	1	$18.78
6709	INSTALLER, SEAL	$7.88	1	$7.88
6710A	CRADLE, ENGINE	$351.91	1	$351.91
6714	FITTING, AIR METERING	$3.78	1	$3.78
6715	STUD, ADAPTER (PR)	$4.70	1	$4.70
6716A	ADAPTER, SP.COMPRESSOR	$9.77	1	$9.77
6719A	HOLDER, YOKE	$37.69	1	$37.69
6724	ALIGNER, CLUTCH	$23.53	1	$23.53
6743	WRENCH, 5TH GEAR NUT	$16.93	1	$16.93
6747	FIXTURE, TRANS.	$80.80	1	$80.80
6751	FUEL LINE TOOL	$6.20	1	$6.20
6752	INSTALLER, BALL JOINT	$9.26	1	$9.26
6753	INSTALLER, BOOT	$7.98	1	$7.98
6754	INSTALLER, BOOT	$7.77	1	$7.77
6755	INSTALLER, BOOT	$8.19	1	$8.19
6756	RECEIVER, BALL JOINT	$12.90	1	$12.90
6757	REMOVER, BALL JOINT	$5.06	1	$5.06
6758	INSTALLER, BALL JOINT	$9.37	1	$9.37
6759	INSTALLER, BALL JOINT	$11.47	1	$11.47
6760	RECEIVER, BALL JOINT	$5.50	1	$5.50
6761	INSTALLER, BALL JOINT	$14.73	1	$14.73

6762	RELEASE, QUICK CONNECT	$1.50	2	$3.00
6764	INSTALLER, SEAL	$37.75	1	$37.75
6765	SCREW, FORCING	$2.31	1	$2.31
6768	REMOVER, BEARING	$33.74	1	$33.74
6770	MASTER BEARING SET	$208.48	1	$208.48
6771	REMOVER, CRANK SEAL	$18.49	1	$18.49
6773	EXTRACTOR, SLEEVE	$41.58	1	$41.58
6775	GAUGE SET,MASTER PINION	$270.12	1	$270.12
6776	MASTER BEARING SET	$267.98	1	$267.98
6779	ADAPTER, VALVE SPRING	$12.14	1	$12.14
6780	INSTALLER, CRANK SEAL	$19.03	1	$19.03
6782	FUEL LINE TOOL	$4.96	1	$4.96
6783	REMOVER/INST, LEVER	$66.18	1	$66.18
6785	FIXTURE, ASSEMBLY	$121.85	1	$121.85
6786	REMOVER, BUSHING	$3.74	1	$3.74
6787	REMOVER, BEARING	$56.62	1	$56.62
6788	PROTECTOR, SEAL	$9.31	1	$9.31
6792	INSTALLER, SPROCKET	$13.59	1	$13.59
6793	REMOVER, SPROCKET	$16.03	1	$16.03
6802	TUBE, BLEED (SET OF 4)	$15.13	1	$15.13
6804	ADAPTER, PRESS	$16.81	1	$16.81
6805	ADAPTER, BRAKE TEST	$33.93	1	$33.93
6806	INSTALLER, SEAL	$8.47	1	$8.47
6807	REMOVER/PROBE, TERM.	$15.06	1	$15.06
6810	INSTALLER, BUSHING	$5.38	1	$5.38
6815	P/S KIT,PRESSURE/FLOW	$297.67	1	$297.67
6818	SLEEVE, VALVE GUIDE	$0.57	1	$0.57
6819	SLEEVE, VALVE GUIDE	$0.67	1	$0.67
6820	ADAPTERS, PULLER	$27.62	1	$27.62
6827A	INSERT, CRANKSHAFT	$5.06	1	$5.06
6831A	REMOVER/INSTALLER	$22.16	1	$22.16
6833	ADAPTERS, PRESS. TEST	$57.10	1	$57.10
6841	HOLDER, CAMSHAFT SPROCKET	$30.52	1	$30.52
6847	HOLDER, CAMSHAFT SPROCKET	$35.71	1	$35.71
6856	SPANNER, FUEL PUMP RING	$39.58	1	$39.58
6857	RELEASE TOOL	$1.50	1	$1.50
6858	REMOVER/INSTALLER	$41.30	1	$41.30
6863	INSTALLER, SEAL	$6.45	1	$6.45
6864	WRENCH, STRUT NUT	$11.20	1	$11.20
6867	REMOVER, TERMINAL (PICK)	$3.57	1	$3.57
6870	REMOVER/INSTALLER	$20.38	1	$20.38
6871	INSTALLER, A/C HUB	$12.84	1	$12.84
6874	ADAPTER, P/S	$11.26	1	$11.26
6875	INSTALLER, BOOT RETAINER	$50.19	1	$50.19
6876	INSTALLER/RECIEVER	$16.70	1	$16.70
6877	REMOVER/INSTALLER	$7.06	1	$7.06
6885	ADAPTER, VALVE SPRING	$9.81	1	$9.81
6886	POST, SPRING COMPRESSOR	$10.92	1	$10.92
6887	ADAPTER, SPRING COMPRESSOR	$25.50	1	$25.50
6888	INSTALLER, SEAL	$14.26	1	$14.26
6891	REMOVER/INSTALLER	$7.25	1	$7.25
6892	ADAPTER, BRAKE PRESS. TEST	$19.24	1	$19.24

6893	ADAPTER KIT, P/S	$51.55	1	$51.55
6906	FLUSHER, A/T COOLER	$250.00	1	$250.00
6908	REMOVER/INSTALLER	$43.89	1	$43.89
6909A	ADAPTER PINS	$10.27	1	$10.27
6910	SUPPORT	$7.67	1	$7.67
6912	SUPPORT	$39.47	1	$39.47
6917	EVAP.SYS. DIAGNOSTIC TOOLS	$994.68	1	$994.68
6919	REMOVER, BALL JOINT	$2.77	1	$2.77
6920	TUBES, MAST.CYL. BLEED	$8.34	1	$8.34
6921	CAP, MASTER CYLINDER	$24.20	1	$24.20
6923	ADAPT., FUEL PRESS. TEST	$28.55	1	$28.55
6926	INSTALLER, SEAL	$71.24	1	$71.24
6932	REMOVER, ELEC. TERMINAL	$4.29	1	$4.29
6934	REMOVER, ELEC. TERMINAL	$5.48	1	$5.48
6936	SPACER	$1.79	1	$1.79
6951	INSTALLER, BUSHING	$13.63	1	$13.63
6952	INSTALLER, SEAL	$27.00	1	$27.00
6953	REM./INST., BEARING	$11.34	1	$11.34
6954	INSTALLER, BEARING	$8.28	1	$8.28
6956	TOOLS, DIFFERENTIAL	$139.66	1	$139.66
6957	REMOVER, BUSHING	$41.89	1	$41.89
6958	WRENCH, SPANNER	$18.07	1	$18.07
6959	HOSE, P/S PRESS. TEST	$13.03	1	$13.03
6960	TOOL, TRAC-LOK	$20.90	1	$20.90
6963	FIXTURE, HOLDING	$28.24	1	$28.24
6965	FIXTURE, HOLDING	$15.23	1	$15.23
7193	DISCONNECTS, A/C LINE	$19.75	1	$19.75
7554	ADAPTER	$6.45	1	$6.45
7603	LONG NUT	$10.45	1	$10.45
7604	SPECIAL BOLT	$8.75	1	$8.75
7663	GAUGE	$48.65	1	$48.65
7700-A	COOLING TESTER	$213.89	1	$213.89
7794-A	REMOVER, SEAL	$20.95	1	$20.95
7823	INSTALLER	$12.65	1	$12.65
7828-A	INSTALLER	$24.20	1	$24.20
7829-A	REMOVER	$18.40	1	$18.40
7884	INSTALLER	$6.65	1	$6.65
7887	INSTALLER	$7.20	1	$7.20
7888	INSTALLER	$6.50	1	$6.50
7889-A	REMOVER	$10.30	1	$10.30
7891	INSTALLER	$7.80	1	$7.80
7932	REMOVER/INSTALLER	$36.50	1	$36.50
7934	INSTALLER	$8.20	1	$8.20
8033A	INSTALLER, BEARING	$22.75	1	$22.75
C-293-18	ADAPTER BLOCKS	$14.25	1	$14.25
C-293-3	EXTENSION	$7.10	1	$7.10
C-293-36	ADAPTER SET	$13.70	1	$13.70
C-293-39	ADAPTER SET	$14.45	1	$14.45
C-293-40	ADAPTER SET	$14.45	1	$14.45
C-293-42	ADAPTER SET	$13.25	1	$13.25
C-293-44	ADAPTER SET	$13.25	1	$13.25
C-293-45	ADAPTER SET	$14.45	1	$14.45

C-293-48	ADAPTER SET	$13.20	1	$13.20
C-293-50	ADAPTER SET	$16.50	1	$16.50
C-293-52	ADAPTER SET	$16.50	1	$16.50
C-293-PA	PULLER, BEARING	$59.85	1	$59.85
C-3052	REMOVER, BUSHING	$17.65	1	$17.65
C-3053	INSTALLER, BUSHING	$22.45	1	$22.45
C-3059	REMOVER/INST, BRG.	$5.05	1	$5.05
C-3095-A	INSTALLER	$15.10	1	$15.10
C-3132-A	REMOVER/INSTALLER	$118.35	1	$118.35
C-3281	HOLDER	$37.95	1	$37.95
C-3288-B	PILOT,RING GEAR (PR)	$6.10	1	$6.10
C-3292	GAUGE, 100 PSI	$26.85	1	$26.85
C-3293-SP	GAUGE & HOSE	$29.00	1	$29.00
C-3339	DIAL INDICATOR SET	$94.50	1	$94.50
C-3422-B	COMPRESSOR, VALVE SP.	$89.50	1	$89.50
C-3509	HOLDER, CAMSHAFT	$16.10	1	$16.10
C-3561	WRENCH, BALL JOINT(2 1/8")	$20.50	1	$20.50
C-3564-A	REMOVER, BALL STUD	$11.60	1	$11.60
C-3575-A	COMPRESSOR, FT. CLUTCH	$23.35	1	$23.35
C-3688	PULLER	$48.50	1	$48.50
C-3705	ADAPTER, FT. BAND ADJ.	$12.95	1	$12.95
C-3716-A	DRIVER	$13.50	1	$13.50
C-3717	INSTALLER	$9.75	1	$9.75
C-3718	INSTALLER, PINION	$19.85	1	$19.85
C-3719-A	INSTALLER	$13.60	1	$13.60
C-3752	PULLER SET	$27.10	1	$27.10
C-3763	GAUGE	$10.10	1	$10.10
C-3860-A	INSTALLER	$16.25	1	$16.25
C-3861	PULLER	$27.55	1	$27.55
C-3863-A	COMPRESSOR	$55.65	1	$55.65
C-3887-B	REM/INST SET, BUSHING	$191.50	1	$191.50
C-3894-A	PULLER	$37.45	1	$37.45
C-3972-A	INSTALLER	$16.95	1	$16.95
C-3973	SLEEVE	$2.60	1	$2.60
C-3981B	PULLER	$31.58	1	$31.58
C-3995-A	INSTALLER	$12.50	1	$12.50
C-4004	INSTALLER	$5.65	1	$5.65
C-4007-A	GUAGE SET	$69.50	1	$69.50
C-4016	REMOVER	$10.50	1	$10.50
C-4029	BLEEDER TUBES	$6.75	1	$6.75
C-4040	INSTALLER,BEARING CUP	$14.60	1	$14.60
C-4063B	INSTALLER	$21.20	1	$21.20
C-4076-A	INSTALLER, SEAL	$12.35	1	$12.35
C-4109A	INSTALLER, SEAL	$13.30	1	$13.30
C-4119	INSTALLER	$26.30	1	$26.30
C-4120	REMOVER	$16.90	1	$16.90
C-4129-A	REMOVER	$33.95	1	$33.95
C-4150A	PULLER	$37.86	1	$37.86
C-4156	REMOVER/INSTALLER	$21.85	1	$21.85
C-4156-2	ADAPTER	$4.75	1	$4.75
C-4162	GAUGE & ADAPTER	$74.65	1	$74.65
C-4164	WRENCH, ADJUSTING	$22.85	1	$22.85

C-4167	REMOVER, BRG. & SEAL	$19.90	1	$19.90
C-4171	HANDLE	$10.85	1	$10.85
C-4171-2	EXTENSION, HANDLE	$14.90	1	$14.90
C-4175	ARBOR, ALIGNING	$11.85	1	$11.85
C-4190	INSTALLER,BEARING	$14.65	1	$14.65
C-4193A	INSTALLER	$17.50	1	$17.50
C-4198	INSTALLER,BRG.& SEAL	$11.85	1	$11.85
C-4203	INSTALLER, SEAL	$12.50	1	$12.50
C-4204	INSTALLER, BRG. CUP	$13.85	1	$13.85
C-4210	INSTALLER	$10.45	1	$10.45
C-4212-3	ADAPTER,	$15.05	1	$15.05
C-4212-4	RECEIVER,	$15.20	1	$15.20
C-4213	INSTALLER, BEARING	$14.50	1	$14.50
C-4306	REMOVER/INSTALLER	$119.50	1	$119.50
C-4333	PULLER	$28.65	1	$28.65
C-4334	EXTRACTOR	$10.80	1	$10.80
C-4340	INSTALLER, BRG. CONE	$12.55	1	$12.55
C-4366-1	CUP, RECEIVER	$26.35	1	$26.35
C-4366-2	REMOVER, BUSHING	$9.87	1	$9.87
C-4383-7	INSTALLER, SEAL	$6.00	1	$6.00
C-4469	REMOVER/INSTALLER	$19.65	1	$19.65
C-4470	REMOVER/INSTALLER	$19.50	1	$19.50
C-4487	REMOVER/INSTALLER	$47.50	1	$47.50
C-452	REMOVER	$21.65	1	$21.65
C-4537	SOCKET	$7.10	1	$7.10
C-4546	BLEEDER TUBES (PR.)	$7.20	1	$7.20
C-4570	EXTENSION	$5.65	1	$5.65
C-4574	PLIER	$19.50	1	$19.50
C-4578	ADAPTER	$49.50	1	$49.50
C-4581	ADJUSTER,CAST./CAM.	$37.25	1	$37.25
C-4581-A	WRENCH	$6.95	1	$6.95
C-4597	SOCKET, OIL SENDER	$24.95	1	$24.95
C-4626	GAUGE SET	$158.50	1	$158.50
C-4628	INSTALLER	$9.95	1	$9.95
C-4637	INSTALLER, BEARING	$19.10	1	$19.10
C-4653	INSTALLER	$13.50	1	$13.50
C-4655	INSTALLER, BEARING	$9.80	1	$9.80
C-4656	REMOVER, BEARING	$9.35	1	$9.35
C-4657	INSTALLER, SEAL	$10.15	1	$10.15
C-4658	ADAPTER SET	$33.10	1	$33.10
C-4660-A	REMOVER	$62.50	1	$62.50
C-4662-A	INSTALLER	$6.45	1	$6.45
C-4674	INSTALLER, SEAL	$8.25	1	$8.25
C-4676	ALIGNER, CLUTCH	$38.20	1	$38.20
C-4679A	REMOVER	$24.22	1	$24.22
C-4680	INSTALLER	$27.50	1	$27.50
C-4682	COMPRESSOR	$23.15	1	$23.15
C-4685-C	REMOVER/INSTALLER	$34.50	1	$34.50
C-4686	REMOVER/INSTALLER	$17.95	1	$17.95
C-4687	HOLDER	$23.95	1	$23.95
C-4687-1	ADAPTER	$19.85	1	$19.85
C-4689	INSTALLER	$19.15	1	$19.15

C-4690	INSTALLER	$20.15	1	$20.15
C-4693	REMOVER	$47.50	1	$47.50
C-4697	REMOVER/INSTALLER	$16.85	1	$16.85
C-4698	INSTALLER	$31.85	1	$31.85
C-4699-1	REMOVER/INSTALLER	$15.60	1	$15.60
C-4699-2	RECIEVER CUP	$15.85	1	$15.85
C-4702	REMOVER/INSTALLER	$51.95	1	$51.95
C-4703	WRENCH	$21.85	1	$21.85
C-4735	HANDLE, INSTALLER	$13.00	1	$13.00
C-4755	TRIM STICK	$2.35	1	$2.35
C-4777	LEGS (PR.)	$27.35	1	$27.35
C-4799-B	GAUGE	$49.58	1	$49.58
C-4816	SOCKET	$11.85	1	$11.85
C-4826	INSTALLER, BEARING	$22.50	1	$22.50
C-4828	REMOVER, BEARING	$56.75	1	$56.75
C-4829	REMOVER	$2.75	1	$2.75
C-4838	COMPRESSOR (PR)	$92.50	1	$92.50
C-4842	INSTALLER	$18.10	1	$18.10
C-4867	REMOVER	$3.95	1	$3.95
C-4888	INSTALLER	$13.35	1	$13.35
C-4965	INSTALLER	$15.50	1	$15.50
C-4967	REMOVER, SEAL	$10.25	1	$10.25
C-4975A	INSTALLER	$16.53	1	$16.53
C-4992	INSTALLER	$19.50	1	$19.50
C-4995	ADAPTER, WRENCH	$15.50	1	$15.50
C-4996	ADAPTER PLUG	$8.50	1	$8.50
C-637	HAMMER, SLIDE	$54.95	1	$54.95
C-748	REMOVER, SEAL	$25.50	1	$25.50
CT-1003	PULLER	$27.50	1	$27.50
CT-1106	PULLER	$16.10	1	$16.10
CT-1108	SOCKET	$7.55	1	$7.55
CT-1112	WRENCH	$18.65	1	$18.65
D-111	INSTALLER,BEARING CUP	$12.05	1	$12.05
D-144	INSTALLER,BEARING CUP	$10.35	1	$10.35
D-145	INSTALLER,BEARING CUP	$11.25	1	$11.25
D-147	REMOVER, BEARING CUP	$8.30	1	$8.30
D-148	REMOVER, BEARING CUP	$9.20	1	$9.20
D-156	INSTALLER, BEARING	$14.85	1	$14.85
D-158	REMOVER, BEARING CUP	$11.75	1	$11.75
D-159	REMOVER, BEARING CUP	$10.95	1	$10.95
D-162	REMOVER, BEARING CUP	$10.60	1	$10.60
D-163	INSTALLER, SEAL	$16.20	1	$16.20
D-187-B	INSTALLER, SEAL	$4.81	1	$4.81
D-191	INSTALLER, YOKE	$39.80	1	$39.80
D-354	INSTALLER, BRG	$52.95	1	$52.95
D-389	INSTALLER, BEARING	$13.65	1	$13.65
DD-1278	COMPRESSOR, SPRING	$42.50	1	$42.50
DD-914-42	BUTTON	$8.20	1	$8.20
L-4406	REMOVER & ADAPTER	$79.50	1	$79.50
L-4407A	PULLER	$29.90	1	$29.90
L-4408	INSTALLER	$13.00	1	$13.00
L-4410	INSTALLER	$13.95	1	$13.95

L-4411	INSTALLER	$13.65	1	$13.65
L-4429	INSTALLER	$38.45	1	$38.45
L-4429-3	INSTALLER-ADAPTER	$12.10	1	$12.10
L-4432	CHECKER, END PLAY	$32.50	1	$32.50
L-4434	HOLDER	$46.50	1	$46.50
L-4435	REMOVER	$23.40	1	$23.40
L-4436-A	ADAPTER, WRENCH	$18.60	1	$18.60
L-4437	ADAPTERS, PULLER	$8.95	1	$8.95
L-4438	POST, DIAL INDICATOR	$5.25	1	$5.25
L-4439	STARTER NUT	$8.35	1	$8.35
L-4440	INSTALLER	$28.20	1	$28.20
L-4462	INSTALLER	$9.40	1	$9.40
L-4507	INSTALLER	$13.25	1	$13.25
L-4508	ADAPTER	$9.50	1	$9.50
L-4512	REMOVER/INSTALLER	$54.25	1	$54.25
L-4517	REMOVER	$7.95	1	$7.95
L-4518	REMOVER	$61.50	1	$61.50
L-4520	INSTALLER	$11.40	1	$11.40
L-4534	PULLER	$52.10	1	$52.10
L-4558A	SOCKET & HOLDER	$25.60	1	$25.60
L-4559	ADAPTER SET	$11.95	1	$11.95
L-4559-2	ADAPTER	$3.80	1	$3.80
MB-990031A	INSTALLER, SEAL	$17.84	1	$17.84
MB-990392	ARBOR, CROSSBORE	$35.30	1	$35.30
MB-990641	REMOVER/INSTALLER	$31.50	1	$31.50
MB-990652	DRIVER	$9.45	1	$9.45
MB-990775	HOLDER, CAM SPROCKET	$24.50	1	$24.50
MB-990776-A	CUP REMOVER/INSTALLER	$18.50	1	$18.50
MB-990779	HANDLE	$9.35	1	$9.35
MB-990799	INSTALLER	$12.00	1	$12.00
MB-990800	REMOVER/INSTALLER	$8.70	1	$8.70
MB-990985	INSTALLER SEAL	$15.50	1	$15.50
MB-990988	FIXTURE	$26.50	1	$26.50
MB-990998	REMOVER/INSTALLER	$29.15	1	$29.15
MB-991001	BRIDGE	$32.50	1	$32.50
MB-991013	SPANNER WRENCH	$14.29	1	$14.29
MB-991045	REMOVER/INSTALLER	$24.50	1	$24.50
MB-991113	PULLER	$56.85	1	$56.85
MB-991115	INSTALLER	$17.35	1	$17.35
MB-991144	ADAPTER, TORQUE WRENCH	$14.18	1	$14.18
MB-991317	INSTALLER	$5.25	1	$5.25
MB-991318	REM./INST./ARBOR	$12.70	1	$12.70
MB-991407	REMOVER/INSTALLER	$4.00	1	$4.00
MB-991452A	INSTALLER, SEAL	$3.57	1	$3.57
MB-991456	PULLER, A/C BRG.	$23.17	1	$23.17
MB-991459	PROTECTOR, SEAL	$3.49	1	$3.49
MD-998011-A	INSTALLER	$14.00	1	$14.00
MD-998056-A	PULLER	$82.50	1	$82.50
MD-998162	WRENCH	$8.93	1	$8.93
MD-998200	INSTALLER	$9.95	1	$9.95
MD-998245	INSTALLER	$5.50	1	$5.50
MD-998266	GUIDE PINS (2)	$4.65	1	$4.65

MD-998280	INSTALLER	$36.20	1	$36.20
MD-998282	PULLER	$27.25	1	$27.25
MD-998285	INSTALLER	$14.50	1	$14.50
MD-998286A	INSTALLER	$43.50	1	$43.50
MD-998306	INSTALLER	$8.25	1	$8.25
MD-998321	INSTALLER	$8.95	1	$8.95
MD-998322	INSTALLER	$11.95	1	$11.95
MD-998323	INSTALLER	$11.75	1	$11.75
MD-998325	INSTALLER	$19.95	1	$19.95
MD-998332	ADAPTER	$8.15	1	$8.15
MD-998333	REMOVER	$12.60	1	$12.60
MD-998334	INSTALLER	$20.35	1	$20.35
MD-998336	GUIDE PINS (2)	$8.25	1	$8.25
MD-998343	ADAPTER	$7.95	1	$7.95
MD-998344	ADAPTER	$5.65	1	$5.65
MD-998346	PULLER	$46.95	1	$46.95
MD-998351	RETAINER	$22.50	1	$22.50
MD-998367	INSTALLER, SNAP RING	$7.05	1	$7.05
MD-998371	PULLER	$28.15	1	$28.15
MD-998372	PULLER	$37.10	1	$37.10
MD-998373	INSTALLER	$45.35	1	$45.35
MD-998374	GUIDE PLATE	$21.65	1	$21.65
MD-998376	INSTALLER	$17.25	1	$17.25
MD-998443	HOLDER, LIFTER	$12.60	2	$25.20
MD-998709	TESTER, FUEL PRESS.	$32.50	1	$32.50
MD-998713	INSTALLER	$12.95	1	$12.95
MD-998717	INSTALLER, SEAL	$12.60	1	$12.60
MD-998718	INSTALLER	$14.25	1	$14.25
MD-998729	INSTALLER, SEAL	$10.71	1	$10.71
MD-998738	SET SCREW, TENSIONER	$4.85	1	$4.85
MD-998742	ADAPTER	$4.80	1	$4.80
MD-998760	INSTALLER, SEAL	$7.42	1	$7.42
MD-998767	WRENCH, TENSIONER	$12.60	1	$12.60
MD-998772A	COMPRESSOR, VALVE SPR.	$142.54	1	$142.54
MD-998774	INSTALLER, SEAL	$5.67	1	$5.67
MD-998776A	INSTALLER, SEAL	$20.30	1	$20.30
MD-998785	LOCK, SILENT SHAFT SPROCKET	$12.27	1	$12.27
MD-998802-01	SOCKET, SPLINED	$8.00	1	$8.00
MD-998803	INSTALLER, SEAL	$8.47	1	$8.47
MD-998806	ADAPTER, WRENCH	$4.10	1	$4.10
MD-998807A	REMOVER, PIN	$16.18	1	$16.18
MD-998808-1	SNAP RING INSTALLER	$7.73	1	$7.73
MD-998905	HANDLE	$4.60	1	$4.60
MD-998906	ADAPTER, WRENCH	$9.45	1	$9.45
MD-998907	COMPRESSOR, SPRING	$28.40	1	$28.40
MD-998909	INSTALLER, BEARING	$12.80	1	$12.80
MD-998911-A	INSTALLER, BEARING	$7.35	1	$7.35
MD-998913	EXTENSION, DIAL IND.	$2.30	1	$2.30
MD-998915-A	SUPPORT	$6.20	1	$6.20
MD-998916	WRENCHES, SERVO	$20.48	1	$20.48
MD-998918	WRENCH, SERVO	$17.77	1	$17.77
MD-998919	INSTALLER, SNAP RING	$8.93	1	$8.93

P-334	PULLER	$47.95	1	$47.95
S-94	ADAPTER	$4.75	1	$4.75
SP-1730	SLEEVE, LOCATING	$5.40	1	$5.40
SP-3193	COMPRESSION NUT	$8.50	1	$8.50
SP-3194-B	COMPRESSION SLEEVE	$14.35	1	$14.35
SP-3243	ARBOR	$33.50	1	$33.50
SP-3244	PINION LOCAT. SPACER	$11.75	1	$11.75
SP-3245	SHAFT LOCATING SLEEVE	$5.50	1	$5.50
SP-3250	GUAGE BLOCK	$11.95	1	$11.95
SP-3289	EXTENSION, PULLER	$6.50	1	$6.50
SP-526	SHAFT, ASSY.	$49.25	1	$49.25
SP-533	NUT, COMPRESSION	$8.45	1	$8.45
SP-534	CENTRALIZING WASHER	$4.05	1	$4.05
SP-535-A	NUT, SPECIAL	$19.85	1	$19.85
SP-536	SCREW	$0.60	1	$0.60
SP-5382	SHAFT LOCATING SLEEVE	$7.00	1	$7.00
SP-5383	GUAGE BLOCK	$10.85	1	$10.85
SP-5385	MAINSHAFT	$48.85	1	$48.85
SP-6017	SPACER,PINION LOCATING	$12.75	1	$12.75
SP-6018	ARBOR, CROSSBORE	$39.75	1	$39.75
SP-6020	BLOCK, GAUGE	$11.20	1	$11.20
SP-6022	COMPRESS.SLEEVE ADAPT.	$5.95	1	$5.95
SP-6029	ARBOR	$44.50	1	$44.50
SP-6030	PINION LOCAT.SPACER	$12.65	1	$12.65
W-129-B	SPREADER	$121.50	1	$121.50
W-162-D	INSTALLER,YOKE/BEARING	$17.90	1	$17.90
W-251	REMOVER, SEAL	$17.50	1	$17.50
W-262	INSTALLER, BEARING	$14.85	1	$14.85
	TOTAL TOOLS/DOLLARS	546		$15,133.86

INVENTORY OF DONATED MANUALS

1. 1995 CHILTON Auto Repair Manual, 1991-95, U.S. and Canadian Models, Part No. 7915

2. 1995 CHILTON Truck and Van Repair Manual, 1991-95, U.S. and Canadian Models, Part No. 7911

3. Ford 1996 Taurus/Sable, Electrical and Vacuum Troubleshooting Manual X2

4. Ford 1995 Thunderbird/Courgar-XR7, Electrical and Vacuum Troubleshooting Manual

5. Ford 1995 Mark VIII, Electrical and Vacuum Troubleshooting Manual

6. Ford 1995 Mustang, Electical and Vacuum Troubleshooting Manual

7. Ford 1995 Crown Victoria/Grand Marquis, Electrical and Vacuum Troubleshooting Manual

8. Ford 1995 Town Car, Electrical and Vacuum Troubleshooting Manual

9. Ford 1996 Mustang, Electical and Vacuum Troubleshooting Manual

10. Ford 1996 Thunderbird/Courgar-XR7, Electrical and Vacuum Troubleshooting Manual

11. Ford 1996 Town Car, Electrical and Vacuum Troubleshooting Manual

12. Ford 1996 Mark VIII, Electrical and Vacuum Troubleshooting Manual

13. Ford 1996 Crown Victoria/Grand Marquis, Electrical and Vacuum Troubleshooting Manual

FERRIS STATE UNIVERSITY

Memorandum

To: Greg Key

From: Mike Hachman

Subj: Donations from Chrysler Corporation

Date: October 1, 1996

As per your request here is a listing of donations from Chrysler Corporation received as a direct result of the CAP program:

- 15 Interactive CD Training Programs.
- Service Manuals from the present, back six years.
- Special tools for Chrysler Corporation vehicles from the present, back six years.
- MDS (Mopar Diagnostic System).
- DRB III with pep module.
- Monthly Master Tech Training Videos.
- Donations of vehicles: 2 presently....3 more expected this year.
- Donations of training aids: Transmissions, Engines, Air Conditioning Units.
- Chrysler Training Publications covering engines, brakes, fuel injection, transmissions, powertrains, diagnostics, etc.

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

SUMMARY: CURRICULUM REVIEW

INTRODUCTION

This section of the Program Review Report summarizes the results of the AST curriculum review. The review committee distributed 200 curriculum review surveys and received 44 responses for a 22% return.

The survey's intent was to evaluate the current AST curriculum and to receive input regarding six program options that the AST faculty curriculum committee are currently analyzing.

The review of the current AST curriculum clearly shows that the AST program is doing an exceptional job of preparing students to help fulfill the needs of Michigan's automobile/light truck service industry. There is a strong need for entry-level technicians that have developed fundamental and advanced skills and knowledges. In addition, AST graduates have the potential within their career for personal and financial growth.

SUMMARY OF CURRICULUM REVIEWS

Following are summations of the current AST curriculum and the six curriculum options that are presently being studied by the AST program faculty curriculum committee. A graduate description for each program is at top of the seven program surveys. Refer to page 1 of the survey introduction to identify the page numbers for the various surveys and the graduate description.

REVIEW OF CURRENT AST CURRICULUM

Automotive Service Technology; AAS degree

The survey indicates that the FSU AST program is well accepted and develops the type of graduates that the service industry desires. When asked in question 3 "Are you satisfied with the comprehensive technical level of the current program format and the current Curriculum Guide Sheet?," all respondents noted "YES." This is also indicated in question 7 where respondents identified each of our ten technical courses to be considered essential. The single low rating of "IM 240" (EPA Inspection/Maintenance 240 second emission test) also supports the previous statement because an "IM 240" course is not offered in the AST program. In addition, all respondents to question 4 indicated they are interested in continuing to hire AST graduates in the future.

REVIEW OF OPTIONAL CURRICULUMS BEING STUDIED

Note: Please recognize that those choosing to fill the optional curriculum surveys, did so because they are interested in having those program options available.

General Automotive Service Technician; AAS degree

Respondents to the survey indicated a strong desire for graduates to have completed most of the ten courses currently being taught; refer to question #7. Indicated in question #8 responses, computer literacy, English, math, and technical writing are general education courses considered to be essential. Anticipated starting wages, growth potential, and future earnings (questions #9, 10, and 11) are very good.

Advanced Automotive Service Technician; AAS degree + 1 year

Referring to technical classes considered to be essential (question #5), the strongest vertical column is column #1 (highest ranking). All subject matter areas (horizontal rows) received rankings primarily in the top one third with the exception of "Manual Transmissions and Drivelines," "Suspension, Steering, and Alignment," and "IM 240". Respondents believe that English, speech, technical writing, and computer literacy are important general education study areas; (question #6). Referring to questions #6, 7, and 8, good starting wages, and growth and potential earnings are good. Please note that five respondents indicated a starting wage of only $15,000 to $20,000, for a three year program graduate. In addition, question #10 indicates a perceived shortage of these types of technicians within the state and the nation.

Automotive Service Para-Tech; 1 year certificate

Only seven surveys were returned for this type of optional program. Question #4 indicated a strong need for general education courses in English, math, computer skills, and technical writing.
Only five survey responders to question #5 indicated that they would hire 1 - 2 graduates per year, and only 4 indicated in question #9 that there is a need for this proposed program. Anticipated staring wages are lower than the other options under consideration (question #6). A wide range of responses to survey questions #8 and #10, addressing future income potential and market needs for this type of graduate are exhibited. This program option appears to have a lower need and would be less feasible to address desired graduate course training within a single year.

Automotive Service Para-tech, Specialist in Service Advising; AAS degree

A strong need for this type of program is indicated in question #2. When considering essential technical classes in question #6, the strongest ranking is found in the first vertical column demonstrating a desire to have graduates possess broad technical knowledge - this would need to be developed during the first year of the program. Addressing general education essential courses, all areas received good ranking with the exception of speech and physics. Questions #9 through #12 indicates very good starting wages, growth potential and future earnings, and a strong need within the state and the nation for this type of graduate.

Automotive Service Para-tech, Specialist in Automotive Machine; AAS degree

Responders to this survey showed a very strong market (questions #2, #9, #10, and #11). Very good starting wages, advancement and future earnings are anticipated. Basic math, English, and speech were identified as important general education classes (question #5). First year technical courses considered to be vital relate to basic electrical, engine fundamentals, engine electrical and electronic fuel management systems courses (question #3). Reviewing the data received, a program using the first year of core classes within the Automotive Service Technology program and automotive machine specific courses during the second year would produce graduates that are in strong demand and would provide the graduate with very good starting wages and future earnings, and advancement opportunities.

Automotive Service Para-tech, Specialist in Parts Management; AAS degree

Though the number of respondents was only 8, they indicated many positive points about this optional program; see questions #2 (market need), questions #6, #7, #8, and #11 (starting wages, growth potential, and future earnings), and #9, and #11 (market shortage, within the state and the nation, and within their dealership). Varied responses were given to questions #3, #4, and #5; relating to first year technical classes, second year technical classes, and general education classes. This survey identifies many positive aspects to establishing this program option, but needs additional tools/surveys to clarify certain program course concerns.

CONCLUSION

Reviewing the responses to the various surveys indicate that the current program is doing an exceptional job in preparing future entry-level automotive service technicians. Four optional programs: General Automotive Service Technician, Automotive Service Para-tech specialist attaining an AAS degree in service advising, automotive machine, and parts management have potential to being valuable program options to the student, the State Michigan, related businesses, and to FSU is displayed. The program option that has the least potential, according to survey results, is the automotive service para-tech (1 year certificate).

Additional AST faculty discussion amongst themselves and with related administration needs to continue. Once a consensus is established, further surveys/tools must be developed to receive additional input as to which program options show strong potential, a solid need, and are desirable.

AUTOMOTIVE SERVICE TECHNICIAN

1. What type of service facility do you own/operate?

19	Dealer	2	Franchise
	Independent		Other

2. Have you hired any of our two-year graduates in past years?

12	Yes	7	No

3. Are you satisfied with the comprehensive technical level of the current program format and the "Curriculum Guide Sheet"?

16	Yes		No
	Comments		

4. Are you interested in continuing to hire these graduates in the future?

19	Yes		No
2	Comments	1. As space allows	
		2. Most maybe interested in being a manager instead of a technician.	

5. How many graduates might you hire per year?

1	None	1	3 to 4	1	?
16	1 to 2		5 or more		

6. What type of work would you perform:

1. Master - all.
2. Light mechanical.
3. All lines.
4. Start out lube rack and light maint., advance as they improve their skills.
5. General to begin - then progress as ability allows.
6. All types.
7. Mechanical service repair and maintenance - parts counter.
8. General tech.
9. Auto repair.
10. All areas of mechanical field.
11. Any or all specialty areas however we don't have much turnover at our facility.
12. Start with basic repair and maintenance.
13. Service technician basics, brakes, minor electrical.
14. Whatever they are cerfified in.
15. All general maintenance
16. Advanced automotive service.
17. Tech or tech helper

7. What technical courses do you consider to be essential?

13	Manual Trans & Driveline	15	Automatic Transmissions
16	Brake Systems	16	Suspension, Steering. Alignment
17	Automotive Electronics	17	Engine Electrical
17	Chassis Electrical	4	IM 240
17	Automotive Engines	14	Electronic Fuel Management Systems
13	Automotive HVAC	3	Others: 1. Auto trans. shortage.
			2. All advanced classes.
			3. Strategy based diagnostics.

8. What general education courses do you consider essential?

14	English	4	Speech	1	Other (specify): 1. Interpersonal/social interaction.
14	Math	4	Physics		
2	Psy	17	Computer literacy		
2	History	10	Technical writing		

9. What would be the approximate yearly starting wage?

9	15,000 to 20,000	2	26,000 to 30,000
6	21,000 to 25,000	2	Over 30,000

10. What growth potential do you foresee for these graduates?

1. Very Good.
2. Good.
3. Excellent
4. Depends on the individual - most likely a moderate to rapid growth both in pay & ability.
5. Very good - it is up to the graduate to progress - be aggressive.
6. Increase in wages, training, and experience.
7. With training and experience, unlimited.
8. Depending on drive and ability up to $45,000 per year.
9. Tremendous growth.
10. Unlimited potential.
11. Very strong growth potential.

11. What would you predict to be the earning level after 5 years?

	15,000 to 20,000	3	26,000 to 30,000
1	21,000 to 25,000	16	Over 30,000

12. How many of these graduates do you believe are necessary to fill the void in the market place?

1. Many.
2. No idea.
3. Good tech can get a job anywhere.
4. Several
5. Many - and here we are 60,000 techs short in the U.S.
6. A lot.
7. ?
8. Good techs are hard to find now days, so its real open right now.
9. 250,000 in the nation.
10. As many as possible.
11. Unknown
12. Many
13. Many
14. As many as possible, the shortage of qualified techs considerable.
15. Many.

13. Do you consider ASE certification necessary?

3	No	10	Yes, before hiring	1. If possible
		8	Yes, after hiring	

GENERAL AUTOMOTIVE SERVICE TECHNICIAN
TWO YEAR ASSOCIATE IN APPLIED SCIENCE DEGREE

1. What type of service facility do you own/operate?

14	Dealer	2	Franchise
	Independent		Other:

2. Have you hired our two-year graduates in past years?

7	Yes
7	No

3. Are you in favor of the proposed new format?

9	Yes		Comments:
	No		1. Beginning tech's should be more familiar with basic engine, chassis and brake systems.

4. Are you interested in hiring these graduates in the future?

14	Yes		Comments:
	No		

5. How many graduates might you hire per year?

	None		3 to 4
14	1 to 2		5 or more

6. What type of work would they perform?

1. Driveability, electrical and transmissions.
2. Generally specialty areas as a trainee before left on their own.
3. All types.
4. Bumper to bumper mechanical repairs.
5. Light mechanical and focus on their specialties.
6. Their specialty.
7. Basic repair and maint. to start.
8. All (master)
9. General to begin then progress with ability.
10. General - with 1 or 2 specialty fields.
11. Entry level tec (all skills).
12. Technician.
13. All, general

7. What technical courses do you consider to be essential?

7	Manual Transmission & Drivelines	10	Automatic Transmissions
11	Brake Systems	11	Suspension, Steering, Alignment
12	Automotive Electronics	13	Engine Electrical
12	Chassis Electrical	3	IM 240 ← 1. Someday
11	Automotive Engines	10	Electronic Fuel Management Systems
8	Automotive HVAC	1	Others: 1. Common sense, anaylization & mechanical

8. What general education courses do you consider essential?

9	English	4	Speech		Other:
12	Math	2	Physics		
1	Psychology	1	History		
14	Computer Literacy	8	Technical Writing		

9. What would be the approximate yearly starting wage?

4	15,000 to 20,000		26,000 to 30,000
8	21,000 to 25,000	2	Over 30,000

10. What growth potential do you foresee for these graduates?

1. Very good
2. Mechanics are a skilled trade --- good tec's can almost name there price.
3. Unlimited.
4. Growth to full tech status 60-75 K
5. Excellent
6. Very good
7. Tremendous
8. With training and experience, unlimited.
9. Hugh growth and income potential.

11. What would you predict to be the earning level after 5 years?

	15,000 to 20,000	2	26,000 to 30,000
	21,000 to 25,000	12	Over 30,000

12. How many of these graduates do you believe are necessary to fill the void in the market place?

1. Many
2. ??
3. Good techs will always find work.
4. Unknown
5. Don't know
6. Many
7. As many as possible.
8. 250,000 across the nation.
9. Don't know

13. Do you consider ASE certification necessary?

1	No		
6	Yes, before hiring	1. If possible	
9	Yes, after hiring		

ADVANCED AUTOMOTIVE SERVICE TECHNICIAN

1. What type of service facility do you own/operate/manage?

17	Dealer	2	Franchise
	Independent		Other

2. Do you believe there is a strong market need for this proposed program?

15	Yes	2	Unsure	
	No	3	Comments:	1. I don't believe retention of info. is that strong without being in the field.

3. Would you consider hiring graduates of this program?

13	Yes	1	Comments:	1. Graduates of this type program should be cautioned against unrealisstic beginning wage expectations.
	No			2. Expierenanced auto technicians are in strong demand in northern Michigan.
				3. We like to hire employees that have a good basic understanding and still can learn .

4. How many graduates per year would you hire?

	None		3 to 4
17	1 to 2		5 or more

5. What technical classes do you consider essential? (please rank in order: #1 the highest)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Manual Trans & Drivelines	2	0	0	0	0	1	1	2	3	2	0	
2. Brake Systems	4	1	2	1	1	1	2	1	0	0	1	
3. Automotive Electronics	8	3	2	3	0	0	0	0	1	0	0	
4. Chassis Electrical	5	3	2	1	3	1	1	0	0	0	0	
5. Automotive Engines	4	1	2	0	1	2	1	2	1	0	0	
6. Automotive HVAC	3	0	0	0	1	3	1	0	0	3	1	
7. Automatic Transmissions	5	2	1	1	1	0	1	1	0	0	0	
8. Suspension, Steering, Alignment	3	0	0	1	3	1	3	2	2	0	0	
9. Engine Electrical	5	2	5	2	1	1	0	1	1	0	2	
10. IM 240	2	0	0	1	0	0	0	0	0	2	1	
11. Electronic Fuel Management Sys.	7	2	0	3	1	0	2	0	1	1	0	
12. Other:	2											

1. Drivelines
2. Commonsence, self guidence.

6. What general education classes do you consider essential?

9	English	12	Speech	12	Technical Writing
4	Physics	1	Psychology	14	Computer Literacy
1	History	5	Math		Other: (specify):

7. What would you approximate to be the yearly starting wage?

5	15,000 to 20,000	2	26,000 to 30,000
9	21,000 to 25,000	3	Over 30,000

1. Depending on work ethics and experience.

8. Do you foresee advancement possibilities for these graduates?

17	Yes
	No

9. What would you predict to be the earning potential after 5 years?

	15,000 to 20,000	1	26,000 to 30,000
	21,000 to 25,000	16	Over 30,000

10. How many of these graduates do you believe are necessary to fill the void in the market place in Michigan

Michigan		Nation-wide	
1. 100 - 200		1. No way to even est.	
2. Shortage		2. 2000 - 3000	
3. ?		3. Shortage - Most recent figure 200,000	
4. 300		4. ?	
5. Many		5. 50,000	
6. 400-500?		6. many	
7. 100,000		7. 60,000	
8. Several		8. 250,000	
9. 1000		9. Several	
		10. As many as possible	

11. Do you consider ASE certification necessary?

	No
9	Yes, before hiring
9	Yes, after hiring

1. At some point, state certification before hiring.

1. Ferris has always had an excellant program, however, some attention must be placed on individuals entering the work place, they must realize they are not going to start at the top, and that they don't know everything. Too many good graduates are murt when they enter the work force by seasoned experts. IE: pay you dues!

AUTOMOTIVE SERVICE PARA-TECH ONE YEAR CERTIFICATE

1. What type of repair facility do you own/operate?

[7]	Dealer	[ ]	Cooling System Repair	[ ]	Exhaust Repair
[ ]	Independent	[ ]	Brake Repair	[ ]	Other;
[ ]	Franchise	[ ]	Tire Repair		

2. What type of work would you expect them to perform?

1. Basic mechanical brakes, exhaust, accessory inst., tire & wheel work
Basic electrical in trailer wiring - lights - plows.
2. Lube-oil-filter/maint. tune-up/maint. brake jobs/minor oil leaks/steering & alignment
3. Quick lube, minor repair
4. Service advisor
5. Tech helper, service advisor, appointment coordinator.

3. What technical classes would you consider essential?

[1]	Manual Trans/drivelines	[4]	Engine Electrical	[5]	Brakes
[5]	Automotive Engines	[7]	Basic Electrical	[4]	Electronic Fuel Mgmt. Systems
[5]	Auto Transmissions	[3]	Automotive HVAC	[5]	Suspension, Steering, Alignment
[4]	Electronic Circuits				

1. The more knowledge the better.
2. Drivelines

Automotive Service Technology

APRC 1996-1997

section 3 of 4

4. What general education classes would you consider essential? (please rank in order, #1 highest.)

	1	2	3	4	5	6	7	8	9
1. General English	4	1	2	0	0	0	0	0	0
2. Math	2	4	0	0	0	0	0	0	0
3. Physics	0	0	1	1	0	0	0	0	0
4. Psychology	0	0	1	0	2	0	0	0	0
5. Computer Skills	2	1	4	0	0	0	0	0	0
6. History	0	0	1	0	0	1	0	0	0
7. Technical Writing	1	2	0	4	0	0	1	0	0
8. Foreign Language	0	0	0	0	0	0	0	0	8
9. Other (specify):									

1. Customer relations.

5. How many graduates might you hire per year?

1	None		3 to 4
5	1 to 2	1	Other (please specify): As needed.

6. What would be the approximate starting wage?

3	15,000 to 20,000	2	26,000 to 30,000
2	21,000 to 25,000	1	Over 30,000

7. Would there be growth potential for a non-degreed certificate?

5	Yes	1	Comments:
			1. Slower
1	No		2. This would depend on the individual.

8. What would you predict to be the income level after 5 years?

1 15,000 to 20,000	1 26,000 to 30,000	1 Over 35,000
1 21,000 to 25,000	2 31,000 to 35,000	

ng market need for this proposed program?

4 Yes 0 No 3 Unsure

1. But lean more towards yes due to the factories involvement in quick service programs and the dealers constant and consistent trend towards the same market segment.

10. How many of these grads do you believe it would take to fill the market need?

1. Many
2. Don't know
3. As many as possible
4. Unknown

AUTOMOTIVE SERVICE PARA-TECH SERVICE ADVISOR-SPECIALTY

1. What type of service facility do you own/operate?

9	Dealer	1	Franchise
	Independent	1	Other:

2. Do you believe there is a strong market need for this proposed program?

8	Yes	1	No	1. Most advisors come from within.
1	Not sure			

3. Would you be interested in hiring these graduates?

9	Yes		No
1	Not sure		

4. How many graduates might you hire per year?

	None		3 to 4
7	1 to 2		Other (please specify):

1. One maybe two but hopefully not per year.
2. ?
3. As needed

5. What type of work you would you expect them to perform?

1. Customer write up and sales strongly tuned to customer satisfaction.
2. Scheduling, R.O. wright up, phone, waiting on customers.
3. Computer write up, maintenance selling, customer relations.
4. Service advisor trainee, warrenty administrator.
5. Customer handling, communication, write RO's and help sell
6. Service advisor, dispatcher.

6. What technical classes do you consider essential? (Please rank in order, #1 highest).

	1	2	3	4	5	6	7	8	9	10
1. Manual Trans/Drivelines	2							1		2
2. Brakes	4		1		3					
3. Basic Electrical	6					1				
4. Auto Transmissions	3		1	1					2	
5. Suspension, Steering, Alignment	3	1			1	2				
6. Engine Electrical	3	1	2					1		
7. Automotive Engines	3	1		1			2			
8. Electronic Fuel Mgmt. Systems	4	2	1	1						
9. Automotive HVAC	2			2		1	1	1		
10. Electronic Circuits	3	1							1	1

1. Drivelines

7. What general education classes do you consider essential?

5	English	7	Math	1	Physics
4	Psychology	10	Computer skills	7	Business Management
6	Accounting	2	Speech	7	Technical Writing
	Other: 1. Salesmanship		2. Marketing		

8. What classes would best prepare them to be superior service advisors?

1. Active listening & empathy training - business morals & practices.
Stress & crisis mgt.
2. English, math, computer, accounting.
3. Defusing anger, selling, and customer relations.
4. Dale Carnegie course or equivelant. Good communication skills and memory a must.
5. People skills.
6. Business management.
7. English math computer accounting.
8. Marketing, speech.

9. What would be the approximate starting salary?

3	15,000 to 20,000	1	26,000 to 30,000		Over 35,000
5	21,000 to 25,000	1	31,000 to 35,000		

10. What growth potential do you foresee for these graduates?

1. Very good as most service mgt. and advisors turn over jobs due to lack of knowledge or training or don't really know what thev'e gotton in to.
2. Not as much as techs.
3. Depends on individual.
4. Very good.
5. Assistant service managers. Service managers.

11. What would you predict to be the earning potential after 5 years?

[ ]	15,000 to 20,00	3	26,000 to 30,000
[ ]	21,000 to 25,000	7	Over 30,000

12. How many of these graduates do you believe are necessary to fill the void in the market place in Michigan?

[ ] Michigan	[ ] Nation-wide
1. 200	1. 20,000
2. ?	2. ?
3. Many	3. Many
4. As many as possible.	

AUTO MACHINE

1. What type of service facility to dyou own/operate manage?

14	General machine shop service and engine rebuilding
1	Performance machining only
2	Heavy duty engine machining only
2	Removal and installation of reconditioned engines
3	Other (please specify):
	1. Fuel Shop (injector & pumps & hydostats)
	2. General Automotive Service
	3. Dealership

2. Do you believe there is a strong market need for a graduate from this type of program?

12	Yes
	No
3	Not sure

3. What technical classes would you like to see in the first year Automotive Service core? (Please rank in order, #1 highest and #8 lowest.)

	1	2	3	4	5	6	7	8
Basic Electrical	4	1	1	3				
Engine Fundamentals	11		1					
Engine Electrical	3	3	3					
Manual Transmissions							2	2
Automatic Transmissions			1			2	1	
Chassis Electrical	1				3	2		
Electronic Fuel Management Systems	3	2		2	1			
Automotive HVAC					1	1	1	2

Other (please specify): 1. Auto Machine

4. What technical classes would you like to see in the second year Engine Machining option?

Crank Grinding	9	Aluminum Head Reconditioning	12
Crank Welding	4	Cast Iron Head Reconditioning	12
Cylinder Reconditioning	13	Performance Machining	2
Balancing	3	Connecting Rod Reconditioning	13
Engine Assembly and Installation	11	Main Housing Bore Reconditioning	9
Dyno Testing	4	Other (please specify):	

5. What general education classes do you think would be most important?

Basic Math	13	Basic English	8
Technical Writing	5	Social Science	1
Trigonometry	3	Speech	6
Humanities	2	Other (specify):	1. Business
			2. Understanding customer service skills

6. What would you espect a typical starting wage to be for a graduate of this program?
Please include any expected commissions.

4	$15,000 to $20,000	2	$26,000 to $30,000
10	$21,000 to $25,000		Over $30,000

7. Do you foresee advancement possibilities for these graduates?

10	Yes
1	No
3	Not sure

8. What would you predict the earning potential to be after 5 years experience?
Please include any expected commissions.

1	$15,000 to $20,000	5	$26,000 to $30,000
3	$21,000 to $25,000	7	Over $30,000

9. Do you believe there is a shortage of qualified engine machinists in

	Michigan?	Nation-wide?	
12	Yes	Yes	8
	No	No	
	Not sure	Not sure	4

10. How many graduates do you feel would be necessary to fill the need?

In Michigan?	?	?	20-25		100	?	20	?	800	?	200	
Nation-wide?	?	?			?	?	300	?	9000	?	10000	

11. If you needed a machinist would you consider hiring a graduate from this program?

12	Yes
1	No
1	Not sure

1. There is a real shortage of these in this area.

1. I only specified this area because I know there ia a shortage of machinist.
All through our dealership does not own a machine shop.

AUTOMOTIVE SERVICE PARA-TECH-SPECIALIST IN PARTS MANAGEMENT

1. What type of service facility do you own/operate/manage?

[8] New car dealership [ ] Independent garage

[ ] Machine shop/parts store [ ] Parts store [ ] Other (please specify)

2. Do you believe there is a strong market need for a graduate from this type of program?

[5] Yes [ ] No [3] Not sure 1.Low turn over.

3. What technical classes would you like to see in the first year Automotive Service core?

Please rank in order, #1 highest, #8 lowest.

	1	2	3	4	5	6	7	8	9
1. Basic Electrical	4	2		1		1			
2. Engine Fundamentals	4	1		2		1			
3. Engine Electrical	2		2		2	1	1		
4. Manual Transmissions	2						1	5	
5. Automatic Transmissions	3			1		1	3		
6. Chassis Electrical	2	1	2	1	1	1			
7. Electronic Fuel Mgmt. Systems	3	2	1	1	1				
8. Automotive HVAC	2	1	1		2	1	1	1	
9. Other (please specify):									

1. Interior trim and body.
2.Parts deal with all these.

4. What technical classes would you like to see in the second year parts management option?

Please rank in order, #1 highest, #5 lowest.

	1	2	3	4	5	6	7	8	9
1. Electronic Inventory Control	2	2	2	1		1			
2. Computer Skills	3	2	2	1					
3. Accounting	1	1	1		1		2		
4. Customer Relations	2	1		4	1				
5. Stocking/Shelving Procedures		1	1	1	1	1			
6. Billing Systems			2	1	2	1			
7. Business Management		1			2	1	1		
8. Other (please specify):									

5. What general education classes do you think would be most important?

7	Basic Math	6	Basic English
4	Speech	4	Technical Writing
	Humanities		Social Science
1	Other (specify):	1. Basic computer.	

6. What would you expect a typical starting wage to be for a graduate of this program?

Please include any expected commissions.

1	15,000 to 20,000	2	26,000 to 30,000
4	21,000 to 25,000		Over 30,000

7. Do you foresee growth potential for these graduates?

5	Yes	1	Not sure
	No		

8. What would you predict the earning potential to be after 5 years experience?
Please include any expected commissions.

	15,000 to 20,000	1	26,000 to 30,000
	21,000 to 25,000	6	Over 30,000

9. Do you believe there is a shortage of qualified Parts management personnel in Michigan?

Michigan?		Nation-wide?		
5	Yes	3	Yes	1.Goood management
	No		No	
2	Not sure	2	Not sure	

10. How many graduates do you feel would be necessary to fill the need?

In Michigan?	Nation-wide?
1. As many as possible.	

11. If you needed someone in your Parts Department, would you consider hiring a graduate from this program?

7	Yes
	No
	Not sure

Question 10. How many graduates do you feel would be necessary to fill the need?

Comments:

1. 20 in Michigan
   200 to 300 Nation-wide
2. 100 in Michigan
   ? Nation-wide
3. 800 in Michigan
   9,000 Nation-wide
4. 200 in Michigan
   10,000 Nation-wide - Now!

October 14, 1996

Dear Automotive Service Industry Employer:

Ferris State University endeavors to provide you with the highest quality automotive service graduates. To be able to meet your present and future needs, we are reviewing the structure of the automotive service program and its curriculum. In addition, we are in the process of examining the need and feasibility of offering various options to the automotive service program.

Your assistance and input is essential to the review of the Automotive Service Technology program. To help us identify your needs and preferences, please complete **ONLY** those portions of the survey that are applicable to you as described below.

Your time and effort is appreciated and is important to this process. If you have any questions, please call Greg Key, Professor, Automotive Center at (616) 592-2358. Thank you.

Survey Instructions:

A. To help us evaluate our current program and graduates, please review the "Curriculum Guide Sheet" on pages 2 and 3, and complete the survey on pages 4 and 5.

B. Below are the changes we are researching. First is the renovation of the current two year program, and following that are the new options. A brief description of each is on page 6. Please review these options, and in the box(es) below, indicate which graduates might best serve your needs in the next five years. Then, please fill out **ONLY** the corresponding survey(s) indicated to the far right of the box(es) you checked.

☐	General Automotive Service Technician (Associate in Applied Science Degree)	Survey on page 7
☐	Advanced Automotive Service Technician (Associate in Applied Science Degree + 1 year)	Survey on page 9
☐	Automotive Service Para-Tech (1 year Certificate)	Survey on page 11
☐	Automotive Service Para-Tech, Specialist in Service Advising (AAS Degree)	Survey on page 13
☐	Automotive Service Para-Tech, Specialist in Automotive Machine (AAS Degree)	Survey on page 15
☐	Automotive Service Para-Tech, Specialist in Parts Management (AAS Degree)	Survey on page 17

AUTOMOTIVE SERVICE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE
FALL SEMESTER 95\96
Curriculum Guide Sheet

NAME OF STUDENT: _____ STUDENT I.D. _____

Total semester hours required for graduation: 68

NOTE: Meeting requirements for graduation indicated on this sheet is the responsibility of the student. Compliance with this agreement will assure the student completion of the program in the time frame indicated. Your advisor is available to assist you.

		CREDIT	COMMENT/GRADE
FIRST YEAR - FALL SEMESTER			
AUTO 111	Manual Transmission & Drivelines	4	
AUTO 112	Automotive Brake Systems	4	
AUTO 113	Automotive Electricity & Electronics	4	
PHYS 130	Concepts in Physics	4	
FIRST YEAR - WINTER SEMESTER			
AUTO 114	Automotive Engines	4	
AUTO 115	Suspension, Steering, Alignment Services	4	
AUTO 116	Engine Electrical Systems	4	
AUTO 117	Electronic Fuel Management Systems	4	
ENGL 150	English 1	3	
SECOND YEAR - FALL SEMESTER			
AUTO 200	Service Area*	6	
AUTO 211	Automotive Automatic Transmissions	4	
AUTO 213	Chassis Electrical/Electronics	4	
____ ___	Social Awareness Elective** (choose from list below)	3	
SECOND YEAR - WINTER SEMESTER			
AUTO 250	ServiceArea*	6	
AUTO 214	Automotive HVAC	4	
ENGL 250	English 2	3	
____ ___	Cultural Enrichment Elective	3	

MATH 110 proficiency required for graduation (can be demonstrated by exam or MATH 110 course work).

Computer literacy equivalent to that provided by ISYS 105 required for graduation (can be demonstrated by exam or by course work).

*May be replaced by AUTO 291, Co-op Work Experience, in corporate options.

**SOCIAL AWARENESS ELECTIVE SHOULD BE CHOSEN FROM ONE OF THE FOLLOWING:

SOCY 121 Introductory Sociology
ANTH 122 Introductory Cultural Anthropology
PSYC 150 Introduction to Psychology

CURRICULUM REQUIREMENTS
AUTOMOTIVE SERVICE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE
FALL SEMESTER 95\96

TECHNICAL			CREDIT HOURS
AUTO	111	Manual Transmission & Drivelines	4
AUTO	112	Automotive Brake Systems	4
AUTO	113	Auto. Electiricity & Electronics	4
AUTO	114	Automotive Engines	4
AUTO	115	Suspension, Steering & Align. Svs.	4
AUTO	116	Engine Electrical Systems	4
AUTO	117	Electronic Fuel Management Sys.	4
AUTO	200	Service Area	6
AUTO	211	Auto. Automatic Transmissions	4
AUTO	213	Chassis Electrical/Electronics	4
AUTO	214	Automotive HVAC	4
AUTO	250	Service Area	6

GENERAL EDUCATION			CREDIT HOURS
Communication Competence			
ENGL	150	English 1	3
ENGL	250	English 2	3
Scientific Understanding			
PHYS	130	Concepts in Physics	4
Quantitative Skills			
MATH	110	Fund. of Algebra (Proficiency)	4
Cultural Enrichment			
Elective			3
Social Awareness			
Elective			3

A.A.S. Degree Minimum General Education Requirements in Semester Hours:

Cultural Enrichment Credits - 3
Communications Credits - 6
Social Awareness Credits - 3
Scientific Understanding Credits - 3-4

8\95
pm\cksh95f\ausv

AUTOMOTIVE SERVICE TECHNICIAN

Description: *Students in the current automotive service program receive a comprehensive study of all ASE automobile and light truck service areas, and develop the necessary related diagnosing and servicing skills. With the completion of general education requirements, a two-year A.A.S. degree is awarded. Graduates are prepared to enter the automotive service industry or may continue their education and earn a B.S. degree in FSU offerings such as Automotive and Heavy Equipment Management.*

1. What type of service facility do you own/operate?

   ☐ Dealer ☐ Franchise

   ☐ Independent ☐ Other_____

2. Have you hired any of our two-year graduates in past years?

   ☐ Yes

   ☐ No

3. Are you satisfied with the comprehensive technical level of the current program format and the "Curriculum Guide Sheet"?

   ☐ Yes

   ☐ No ☐ Comments_____

   _____

4. Are you interested in continuing to hire these graduates in the future?

   ☐ Yes

   ☐ No ☐ Comments_____

   _____

5. How many graduates might you hire per year?

   ☐ None ☐ 3 to 4

   ☐ 1 to 2 ☐ 5 or more

6. What type of work would they perform?_____

Continued...

7. What technical courses do you consider to be essential?

☐ Manual Transmission & Driveline ☐ Automatic Transmissions

☐ Brake Systems ☐ Suspension, Steering, Alignment

☐ Automotive Electronics ☐ Engine Electrical

☐ Chassis Electrical ☐ IM 240

☐ Automotive Engines ☐ Electronic Fuel Management Systems

☐ Automotive HVAC ☐ Others_____

8. What general education courses do you consider essential?

☐ English ☐ Speech ☐ Math ☐ Physics ☐ Psychology ☐ Computer literacy

☐ History ☐ Technical Writing ☐ Other (specify):_____

9. What would be the approximate yearly starting wage?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

10. What growth potential do you foresee for these graduates?

_____

11. What would you predict to be the earning level after 5 years?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

12. How many of these graduates do you believe are necessary to fill the void in the market place? _____

13. Do you consider ASE certification necessary?

☐ No

☐ Yes, before hiring

☐ Yes, after hiring

OPTION DESCRIPTIONS

GENERAL AUTOMOTIVE SERVICE TECHNICIAN (RENOVATION OF CURRENT PROGRAM) TWO YEAR ASSOCIATE IN APPLIED SCIENCE DEGREE

Description: This program would be similar to our current two year program. Students would take a one year core curriculum in which they would be exposed to all the areas. In the second year they would choose four areas in which they could specialize in more depth. If they desired to specialize in all areas, these courses could be completed in a third year.

ADVANCED AUTOMOTIVE SERVICE TECHNICIAN

Description: Students in this program would begin with a one year automotive core curriculum. The second year they would choose four specialty areas to take advanced course work in. At the end of the second year they would receive an Associate in Applied Science Degree. The third year they would choose four additional areas in which to take advanced course work. These students would receive more in-depth instruction in all automotive classes than they have received in the past.

AUTOMOTIVE SERVICE PARA-TECH ONE YEAR CERTIFICATE

Description: This program is designed to appeal to the student who desires to enter the automotive service field, but does not desire to pursue an Associate in Applied Science Degree. Upon graduation they will have completed a one year curriculum in automotive core classes. The target market is service industry requiring less technical expertise than the automotive dealer.

AUTOMOTIVE SERVICE PARA-TECH, SERVICE ADVISOR - SPECIALTY

Description: Graduates of this program will first complete a one year basic automotive core curriculum. They will not be trained to the same expertise level of the Automotive Service Technician, nor will they be requested to purchase an entry level technician's tool set. The second year of the curriculum would be designed to prepare them as service advisors. They would have a blend of automotive service and service advising classes and upon completion would receive an Associate in Applied Science Degree.

AUTOMOTIVE SERVICE PARA-TECH, AUTOMOTIVE MACHINE SPECIALTY

Description: Graduates of this program would first complete a one year basic automotive service core curriculum to familiarize them with the total vehicle. The second year of the curriculum would be designed to prepare them as entry level engine machinists. Upon completion an Associate in Applied Science Degree would be awarded.

AUTOMOTIVE SERVICE PARA-TECH, SPECIALIST IN PARTS MANAGEMENT

Description: Students in this program would take the first year automotive core curriculum to familiarize them with the total vehicle. The second year they would specialize in classes specifically designed to acquaint them with the management of a parts department/parts store. Graduates of this program would receive an Associate in Applied Science Degree upon completion.

GENERAL AUTOMOTIVE SERVICE TECHNICIAN
TWO YEAR ASSOCIATE IN APPLIED SCIENCE DEGREE

Description: This program would be similar to our current two year program. Students would take a one year core curriculum in which they would be exposed to all the areas. In the second year they would choose four areas in which they could specialize in more depth. If they desired to specialize in all areas, these courses could be completed in a third year.

1. What type of service facility do you own/operate?

   ☐ Dealer ☐ Franchise

   ☐ Independent ☐ Other_____

2. Have you hired our two-year graduates in past years?

   ☐ Yes

   ☐ No

3. Are you in favor of the proposed new format?

   ☐ Yes

   ☐ No ☐ Comments_____

4. Are you interested in hiring these graduates in the future?

   ☐ Yes

   ☐ No ☐ Comments_____

5. How many graduates might you hire per year?

   ☐ None ☐ 3 to 4

   ☐ 1 to 2 ☐ 5 or more

6. What type of work would they perform?_____

   _____

Continued ...

7. What technical courses do you consider to be essential?

☐ Manual Transmission & Driveline ☐ Automatic Transmissions

☐ Brake Systems ☐ Suspension, Steering, Alignment

☐ Automotive Electronics ☐ Engine Electrical

☐ Chassis Electrical ☐ IM 240

☐ Automotive Engines ☐ Electronic Fuel Management Systems

☐ Automotive HVAC ☐ Others_____

8. What general education courses do you consider essential?

☐ English ☐ Speech ☐ Math ☐ Physics ☐ Psychology ☐ Computer literacy

☐ History ☐ Technical Writing ☐ Other (specify):_____

9. What would be the approximate yearly starting wage?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

10. What growth potential do you foresee for these graduates?

_____

11. What would you predict to be the earning level after 5 years?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

12. How many of these graduates do you believe are necessary to fill the void in the market place? _____

13. Do you consider ASE certification necessary?

☐ No

☐ Yes, before hiring

☐ Yes, after hiring

ADVANCED AUTOMOTIVE SERVICE TECHNICIAN

Description: Students in this program would begin with a one year automotive core curriculum. The second year they would choose four specialty areas to take advanced course work in. At the end of the second year they would receive an Associate in Applied Science Degree. The third year they would choose four additional areas in which to take advanced course work. These students would receive more in-depth instruction in all automotive classes than they have received in the past.

1. What type of service facility do you own/operate/manage?

☐ Dealer ☐ Franchise

☐ Independent ☐ Other_____

2. Do you believe there is a strong market need for this proposed program?

☐ Yes ☐ Unsure

☐ No ☐ Comments_____

---

3. Would you consider hiring graduates of this program?

☐ Yes

☐ No ☐ Comments_____

---

4. How many graduates per year would you hire?

☐ None ☐ 3 to 4

☐ 1 to 2 ☐ 5 or more

5. What technical classes do you consider essential? (please rank in order: #1 the highest)

☐ Manual Transmission & Driveline ☐ Automatic Transmissions

☐ Brake Systems ☐ Suspension, Steering, Alignment

☐ Automotive Electronics ☐ Engine Electrical

☐ Chassis Electrical ☐ IM 240

☐ Automotive Engines ☐ Electronic Fuel Management Systems

☐ Automotive HVAC ☐ Others_____

Continued ...

6. What general education classes do you consider essential?

☐ English ☐ Speech ☐ Math ☐ Physics ☐ Psychology ☐ Computer literacy
☐ History ☐ Technical Writing ☐ Other(specify):_____

7. What would you approximate to be the yearly starting wage?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000
☐ $21,000 to $25,000 ☐ Over $30,000

8. Do you foresee advancement possibilities for these graduates?

☐ Yes
☐ No

9. What would you predict to be the earning potential after 5 years?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000
☐ $21,000 to $25,000 ☐ Over $30,000

10. How many of these graduates do you believe are necessary to fill the void in the market place in Michigan? _____ Nation-wide?_____

11. Do you consider ASE certification necessary?

☐ No
☐ Yes, before hiring
☐ Yes, after hiring

AUTOMOTIVE SERVICE PARA-TECH
ONE YEAR CERTIFICATE

Description: This program is designed to appeal to the student who desires to enter the automotive service field, but does not desire to pursue an Associate in Applied Science Degree. Upon graduation they will have completed a one year curriculum in automotive core classes. The target market is service industry requiring less technical expertise than the automotive dealer.

1. What type of repair facility do you own/operate?

☐ Dealer
☐ Independent
☐ Franchise
☐ Exhaust Repair
☐ Cooling System Repair
☐ Brake Repair
☐ Tire Repair
☐ Other_____

2. What type of work would you expect them to perform?

_____

3. What technical classes would you consider essential?

☐ Manual Trans/Drivelines
☐ Brakes
☐ Basic Electrical
☐ Auto Transmissions
☐ Suspension, Steering, Alignment
☐ Engine Electrical
☐ Automotive Engines
☐ Electronic Fuel Mgmt. Systems
☐ Automotive HVAC
☐ Electronic Circuits

4. What general education classes would you consider essential? (Please rank in order, #1 the highest.)

☐ General English ☐ Math ☐ Physics ☐ Psychology ☐ Computer skills
☐ History ☐ Technical Writing ☐ Foreign Language
☐ Other (specify):_____

5. How many graduates might you hire per year?

☐ None
☐ 1 to 2
☐ 3 to 4
☐ Other (please specify):____

Continued ...

6. What would be the approximate starting wage?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

7. Would there be growth potential for a non-degreed certificate?

☐ Yes

☐ No ☐ Comments_____

_____

_____

8. What would you predict to be the income level after 5 years?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000 ☐ Over $35,000

☐ $21,000 to $25,000 ☐ $31,000 to $35,000

9. Do you believe there is a strong market need for this proposed program?

☐ Yes

☐ No

☐ Unsure

10. How many of these grads do you believe it would take to fill the market need?_____

AUTOMOTIVE SERVICE PARA-TECH
SERVICE ADVISOR - SPECIALTY

Description: Graduates of this program will first complete a one year basic automotive core curriculum. They will not be trained to the same expertise level of the Automotive Service Technician, nor will they be requested to purchase an entry level technician's tool set. The second year of the curriculum would be designed to prepare them as service advisors. They would have a blend of automotive service and service advising classes and upon completion would receive an Associate in Applied Science Degree.

1. What type of service facility do you own/operate?

☐ Dealer ☐ Franchise

☐ Independent ☐ Other_____

2. Do you believe there is a strong market need for this proposed program?

☐ Yes

☐ No

☐ Not sure

3. Would you be interested in hiring these graduates?

☐ Yes

☐ No

☐ Not sure

4. How many graduates might you hire per year?

☐ None ☐ 3 to 4

☐ 1 to 2 ☐ Other (please specify):____

5. What type of work you would you expect them to perform?

_____

6. What technical classes do you consider essential? (Please rank in order, #1 highest).

☐ Manual Trans/Drivelines ☐ Engine Electrical

☐ Brakes ☐ Automotive Engines

☐ Basic Electrical ☐ Electronic Fuel Mgmt. Systems

☐ Auto Transmissions ☐ Automotive HVAC

☐ Suspension, Steering, Alignment ☐ Electronic Circuits

Continued...

7. What general education classes do you consider essential?

☐ English ☐ Math ☐ Physics ☐ Psychology ☐ Computer skills
☐ Business Management ☐ Accounting ☐ Technical Writing
☐ Speech ☐ Other (specify):_____

8. What classes would best prepare them to be superior service advisors?

_____

9. What would be the approximate starting salary?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000 ☐ Over $35,000
☐ $21,000 to $25,000 ☐ $31,000 to $35,000

10. What growth potential do you foresee for these graduates?

_____

_____

11. What would you predict to be the earning potential after 5 years?

☐ $15,000 to $20,000 ☐ $26,000 to $30,000
☐ $21,000 to $25,000 ☐ Over $30,000

12. How many of these graduates do you believe are necessary to fill the void in the market place in Michigan?_____ Nation-wide?_____

AUTOMOTIVE SERVICE PARA-TECH
AUTOMOTIVE MACHINE SPECIALTY

Description: Graduates of this program would first complete a one year basic automotive service core curriculum to familiarize them with the total vehicle. The second year of the curriculum would be designed to prepare them as entry level engine machinists. Upon completion an Associate in Applied Science Degree would be awarded.

1. What type of service facility do you own/operate/manage?

☐ General machine shop service and engine rebuilding

☐ Performance machining only

☐ Heavy duty engine machining only

☐ Removal and installation of reconditioned engines

☐ Other (please specify):_____

2. Do you believe there is a strong market need for a graduate from this type of program?

☐ Yes

☐ No

☐ Not sure

3. What technical classes would you like to see in the **first** year Automotive Service core? (Please rank in order, #1 highest and #8 lowest.)

☐ Basic Electrical

☐ Engine Fundamentals

☐ Engine Electrical

☐ Manual Transmissions

☐ Automatic Transmissions

☐ Chassis Electrical

☐ Electronic Fuel Management Systems

☐ Automotive HVAC

☐ Other (please specify):_____

4. What technical classes would you like to see in the **second** year Engine Machining option?

☐ Crank Grinding

☐ Crank Welding

☐ Cylinder Reconditioning

☐ Balancing

☐ Engine Assembly and Installation

☐ Dyno Testing

☐ Aluminum Head Reconditioning

☐ Cast Iron Head Reconditioning

☐ Performance Machining

☐ Connecting Rod Reconditioning

☐ Main Housing Bore Reconditioning

☐ Other (please specify):_____

Continued ...

5. What general education classes do you think would be most important?

☐ Basic Math ☐ Trigonometry ☐ Basic English ☐ Speech

☐ Technical Writing ☐ Humanities ☐ Social Science

☐ Other (specify):_____

6. What would you expect a typical starting wage to be for a graduate of this program? Please include any expected commissions.

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

7. Do you foresee advancement possibilities for these graduates?

☐ Yes

☐ No

☐ Not sure

8. What would you predict the earning potential to be after 5 years experience? Please include any expected commissions.

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

9. Do you believe there is a shortage of qualified engine machinists in

Michigan?	Nation-wide?
☐ Yes	☐ Yes
☐ No	☐ No
☐ Not sure	☐ Not sure

10 How many graduates do you feel would be necessary to fill the need?

_____ In Michigan _____ Nation-wide?

11. If you needed a machinist would you consider hiring a graduate from this program?

☐ Yes

☐ No

☐ Not sure

AUTOMOTIVE SERVICE PARA-TECH - SPECIALIST IN PARTS MANAGEMENT

Description: Students in this program would take the first year automotive core curriculum to familiarize them with the total vehicle. The second year they would specialize in classes specifically designed to acquaint them with the management of a parts department/parts store. Graduates of this program would receive an Associate in Applied Science Degree upon completion.

1. What type of service facility do you own/operate/manage?

- ☐ New car dealership
- ☐ Independent garage
- ☐ Machine Shop/Parts Store
- ☐ Parts Store
- ☐ Other (please specify):_____

2. Do you believe there is a strong market need for a graduate from this type of program?

- ☐ Yes
- ☐ No
- ☐ Not sure

3. What technical classes would you like to see in the **first** year Automotive Service core? Please rank in order, #1 highest, #8 lowest.

- ☐ Basic Electrical
- ☐ Engine Fundamentals
- ☐ Engine Electrical
- ☐ Manual Transmissions
- ☐ Automatic Transmissions
- ☐ Chassis Electrical
- ☐ Electronic Fuel Mgmt. Systems
- ☐ Automotive HVAC
- ☐ Other (please specify):_____

4. What technical classes would you like to see in the **second** year **Parts Management** option? Please rank in order, #1 highest, #5 lowest.

- ☐ Electronic Inventory Control
- ☐ Computer Skills
- ☐ Accounting
- ☐ Other (please specify):
- ☐ Customer Relations
- ☐ Stocking/Shelving Procedures
- ☐ Billing Systems
- ☐ Business Management

Continued ...

5. What general education classes do you think would be most important?

☐ Basic Math ☐ Basic English ☐ Speech

☐ Technical Writing ☐ Humanities ☐ Social Science ☐ Other (specify):_____

6. What would you expect a typical starting wage to be for a graduate of this program? Please include any expected commissions.

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

7. Do you foresee growth potential for these graduates?

☐ Yes

☐ No

☐ Not sure

8. What would you predict the earning potential to be after 5 years experience? Please include any expected commissions.

☐ $15,000 to $20,000 ☐ $26,000 to $30,000

☐ $21,000 to $25,000 ☐ Over $30,000

9. Do you believe there is a shortage of qualified Parts Management personnel

in Michigan?	Nation-wide?
☐ Yes	☐ Yes
☐ No	☐ No
☐ Not sure	☐ Not sure

10. How many graduates do you feel would be necessary to fill the need?

_____ In Michigan _____ Nation-wide?

11. If you needed someone in your Parts Department, would you consider hiring a graduate from this program?

☐ Yes

☐ No

☐ Not sure

survey.doc

FERRIS STATE UNIVERSITY

October 15, 1996

Dear Employer:

All programs at Ferris State University are reviewed every five years. Part of the review process includes a ***Curriculum Review*** *and an* ***Employer Review*** *from employers of FSU automotive students. Please fill out* ***both*** *of these surveys. On the Curriculum Review Survey just fill out the area that pertains to your situation.*

The Ferris State University Automotive Service Technology program faculty endeavors to provide you with high quality two year automotive service graduates. To be able to determine the effectiveness of our program and to meet your present and future needs, we need your assistance and input. The survey may be reproduced to evaluate more than one employee/FSU graduate.

Your time and effort is greatly appreciated and is important to this process. If you have any questions please call Greg Key, Professor, Automotive Center at (616) 592-2358. Thank you.

Sincerely,

Gregory Key, Professor
Automotive Service Technology

GK:jo

Enclosures: 2 surveys

10-15-96.doc

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

SECTION 10

ENROLLMENT TRENDS

Generally we try to start 80 students every fall. As the chart on the next page 163 shows, we have done that in all except one year, 1994. We only started 46 students that year. We feel that the biggest reason for this was the bad publicity from fiscal restructuring. For example, it was announced that Auto Machine was closing, and a lot of high school instructors told us that they heard all the automotive programs were being closed. After fixing Ferris' image with the high school instructors, we were able to bring our enrollment back to our target of 80 new students the very next year. Again, in the fall of 1996 we were able to enroll 78 students for the second year in a row. The total number of students in the program is back up to 150 in 1996. Starting 78 students in the fall of 1996 is very unexpected, because we didn't start our Ford options this year as we did in 1995. As a result, we are about 10 to 20 students higher than expected for 1996. In the fall of 1997 we are starting our Ford option and expect to bring in 10 to 20 more students. We have some light over loads being taught during both semesters of 1996. With 10 to 20 more students we will probably have to increase our over loads during the year of 1997. In 1998, we will start our first full group of Chrysler students. Sinse we have about 10 in the present group we expect to increase our enrollment about 10 students. Another reason why we expect some increases in enrollment is that the number of high school students is on the rise.

We had a 2.5% enrollment increase in 1996. If only 50% of the Ford and Chrysler trend comes true, we will have an 11.4% increase in the fall of 1997 and a 9% increase in 1998. With the increased numbers of high school students, all our corporate trends, and our recruiting efforts, we expect a very steady increase in enrollment. If the increase does take place, we will need to hire faculty to support the student load.

MEMORANDUM

TO: Greg Key
Professor, Auto Service

FROM: Carol L. Maki CLM
Director, Institutional Analysis

SUBJECT: Data Request (Auto Body, Auto Service)

DATE: November 4, 1996

The attached information is in response to your request for data for the Automotive Service program and the Automotive Body program. It includes, for three separate years:

- the number of students entering the program
- the number and percentage of students returning to FSU one year later
- the number of students graduating from FSU
- the percentage of students graduating from FSU within two years and within three years

If you have any questions or would like more information, please let me know.

attch: table

We have developed a very sophisticated recruiting program to visit high schools. All of the faculty take turns in visiting the different high schools to recruit students. We are in the process of building a recruiting truck. We presently have had three vehicles donated the department that can be licensed to drive. Two of the three have been donated to the auto service program for recruiting and inter visits. We have a Technician of the Future Day where we bring in 1100 high school automotive students to visit the auto program. The Automotive Service Program works at the College of Technology fall kick-off party for all of the students of the College of Technology. The Automotive Service Program is at full capacity and has some over loads for instructors.

Retention and Graduation rates for the University and the Automotive Service Program.

Retention %	University	Automotive
1991	60%	84%
1992	57%	80%
1993	55%	84%

A summary of Carol L. Maki Director of Institutional Analysis report on retention and graduation rates of the University and the Automotive Service program shows that the University retention rate is steadily falling while the Automotive Service Program is steady and 25 to 30% higher than the university average.

Graduation %	University		Automotive	
	2 yr.	3 yr.	2 yr.	3 yr.
1991	13%	23%	19%	59%
1992	8%	20%	24%	63%
1993	7%	16%	18%	52%

The report on graduation also shows that the University's graduation rate for both 2 and 3 years is steadily falling almost to no associate degree students graduating from the university. Furthermore, the Automotive Service Program's graduatation rate is on average about 30% higher than the rest of the University. The reason we stopped at the 1993 graduation rate is because you are supposed to use 150% or three years for a two year program to track graduation rates.

AUTOMOTIVE SERVICE

Class Entering **Fall 1991** #	Returning #	Returning %	1993-94 Graduates #	Graduated within 2 Yrs %	1994-95 Graduates #	Graduated within 3 Yrs Cumulative %
58	49	84%	11	19%	23	59%

Class Entering **Fall 1992** #	Returning #	Returning %	1993-94 Graduates #	Graduated within 2 Yrs %	1994-95 Graduates #	Graduated within 3 Yrs Cumulative %
54	43	80%	13	24%	21	63%

Class Entering **Fall 1993** #	Returning #	Returning %	1993-94 Graduates #	Graduated within 2 Yrs %	1994-95 Graduates #	Graduated within 3 Yrs Cumulative %
56	47	84%	10	18%	19	52%

c:\data\progrevw\gregkey.wk3

Special Request for Greg Key, 11/4/96

TABLE 1C

FERRIS STATE UNIVERSITY

Graduation Rates Of Full-Time First-Time Freshmen (%)
Enrolled in 2-Year Programs
Total and by Gender

	Class Entering Fall	Class Size	% Graduated In 2 Yrs. or Less	3 Yrs. or Less	4 Yrs. or Less	5 Yrs. or Less	6 Yrs. or Less	7 Yrs. or Less	8 Yrs. or Less	9 Yrs. or Less
Total	1987	1754	12	26	33	42	46	47	47	47
	1988	1702	10	25	34	43	46	47	47	
	1989	1748	9	25	34	41	44	45		
	1990	1595	10	26	34	40	42			
	1991	1526	13	23	31	36				
	1992	1451	8	20	27					
	1993	1613	7	16						
	1994	1348	6							
	1995	1479								
Male	1987	1029	12	23	31	39	43	44	45	45
	1988	993	12	28	35	44	47	48	48	
	1989	1031	11	26	34	40	43	44		
	1990	917	11	26	32	37	39			
	1991	960	15	25	32	35				
	1992	853	10	20	27					
	1993	994	9	18						
	1994	775	7							
	1995	884								
Female	1987	725	13	30	37	46	50	50	51	51
	1988	709	8	22	32	42	45	46	46	
	1989	717	7	24	33	41	45	46		
	1990	678	8	27	37	44	47			
	1991	566	9	20	29	36				
	1992	598	5	19	27					
	1993	619	3	12						
	1994	573	4							
	1995	595								

NOTE: For this study, a student is determined as having graduated if he/she received a degree in either a two-year or four-year program. If a student graduates in a two-year program, continues at FSU and then graduates again but in a four-year program, the student is not counted again. Students are not double counted in this study.

TABLE 1A

FERRIS STATE UNIVERSITY

Persistence Rates Of Full-Time First-Time Freshmen (%)
Enrolled in 2-Year Programs
Total and by Gender

	Class Entering Fall	Class Size	% Persistence into Fall of Year								
			2	3	4	5	6	7	8	9	10
Total	1987	1754	64	47	46	46	46	47	48	48	48
	1988	1702	64	49	47	47	46	47	48	47	
	1989	1748	64	49	46	45	45	45	45		
	1990	1595	64	46	44	43	44	45			
	1991	1526	60	43	41	40	39				
	1992	1451	57	40	39	37					
	1993	1613	55	38	34						
	1994	1348	52	41							
	1995	1479	56								
Male	1987	1029	60	46	45	43	44	44	45	45	45
	1988	993	65	50	49	48	47	48	49	49	
	1989	1031	64	50	46	44	44	45	45		
	1990	917	63	44	42	41	40	41			
	1991	960	60	44	42	41	39				
	1992	853	58	41	38	37					
	1993	994	54	37	36						
	1994	775	54	41							
	1995	884	55								
Female	1987	725	68	48	49	49	50	51	51	52	52
	1988	709	63	47	45	45	45	46	46	47	
	1989	717	65	49	46	45	46	46	46		
	1990	678	65	49	48	46	48	49			
	1991	566	59	42	40	39	39				
	1992	598	55	38	39	38					
	1993	619	56	40	32						
	1994	573	51	41							
	1995	595	58								

NOTE: For this study, a student is defined as having persisted into a given term if he/she is attending FSU during that term or has previously graduated from FSU. If a student has graduated and continues to be enrolled at FSU, the student is not counted again. Students are not double counted in this study.

	COLLEGE OF TECHNOLOGY					
	FRESHMAN ADMITTED STUDENTS - 1996					
	MEAN DATA					
	AUTO	CONSTR	ELECT	PRINTING	MFGE	COLLI
H.S. GRADE POINT	2.7	2.8	2.7	2.8	2.8	2.7
ACT COMPOSITE	18.4	18.7	18.6	17.5	19.0	18.6
ACT ENGLISH	16.8	16.8	17.0	16.4	16.9	16.8
ACT MATHEMATICS	18.0	19.1	19.2	17.2	19.3	18.8
ACT READING	18.5	18.5	18.2	17.8	18.7	18.5
ACT SCIENCE	20.1	20.0	19.7	18.3	20.7	20.1

FERRIS STATE UNIVERSITY
ACT DATA
FALL 1996
Type 1 Students
Mean - New Test Scores

	ENGL	MANT	READ	SCIENCE	COMPOSITE	H.S. G
TECH	16.8	18.8	18.5	20.1	18.6	2.7
BUSINESS	17.6	18.4	19.2	19.9	18.9	2.8
A & S	17.0	17.8	18.5	19.1	18.2	2.6
EDUCATION	16.9	17.3	18.6	18.9	18.0	2.7
AHS	17.3	17.2	18.5	19.0	18.2	2.6
FSU	17.1	18.1	18.7	19.5	18.5	2.7

ADMINISTRATIVE PROGRAM REVIEW

Program/Department: AUTO SERVICE / AUTOMOTIVE & HEAVY EQUIPMENT DEPT

Date Submitted: 12/6/95 Dean: Mark Curtis/Assistant Dean: Jack Richa

Please provide the following information:

Enrollment/Personnel

	Fall 1992	Fall 1993	Fall 1992	Fall 1995	
Tenure Track FTE	12	11	11	11	
Overload/Supplemental FTEF					
Adjunct/Clinical FTEF (unpaid)					
Enrollment on-campus total*	150	151	130	129	
Freshman	74	81	46	76	
Sophomore	60	57	69	36	
Junior	11	11	13	11	
Senior	5	2	2	6	
Masters					
Doctoral					
Enrollment off-campus*					

*Use official count (7-day count for semesters, 5-day count for quarters)

Financial

Expenditures*	FY 91	FY 92	FY 93	FY 94	
Supply & Expense	25582.00	18397.00	19704.00	13220.00	202
Equipment	17086.00	17667.00	19200.00	23304.00	282
Gifts & Grants **	1100.00	31300.00	950.00	1000.00	

*Use end of fiscal year expenditures

** Does not include vehicle donations or scholarships.

Other

	AY 90-91	AY 91-92	AY 92-93	AY 93-94	A
Number of Graduates* - Total					
- On campus	64	74	58	53	
- Off campus					
Placement of Graduates	90%	90%	90%	90%	
Average Salary	20500.00	21000.00	21200.00	23000.00	
Productivity - Academic Year Average				288	2
- Summer					5
Summer Enrollment	43	64	55	49	

*Use total for academic year (F, W, S)

1. a. Areas of strengths:

Highly qualified faculty
Excellent equipment and training aids
Outstanding industry support
High graduate salaries
Excellent placement record
Strong advisory committee participation

b. Areas of concern:

Increasing tuition costs for students
More time and money needed for faculty development
More money for equipment purchase - We are concerned that the Voc-Ed mo
may not be looking for additional equipment money to replace the Voc-Ed
dollars.

2. Future goals (please give time frame):

Increase enrollment (fall 1996)

Increase level of corporate support (Chrysler) (1996)

Minor curriculum realignment to meet changing technical requirements (96

3. Recommendations:

New equipment funding sources
Additional faculty development support
More support to program areas for recruiting
Change faculty work load limits to provide more lab-student contact hours
(18 max. contact hours is not sufficient)

SECTION 11

PROGRAM COST

Teaching cost for the program is the only cost figured into the University's teaching cost document. No total cost for any Ferris program is calculated. There is no evaluation of any other costs such as: administrative cost to a program; cost of staff, student workers, and full time adult workers; building; travel and vehicle use in travel for course work; computers, etc. For example, what about the saving that was made by the restructuring of the College of Technology Administration? This information is not presented for any of the college's programs. Teaching cost is only one small part of the cost of delivering an educational program to a student.

Information from the instructional program teaching cost manual includes only teaching cost. Therefore, it is only a piece of the program cost in the program review. It includes only teaching salaries and fringe benefits and is taken from the HRS system. All courses that are used in the calculation are from the program check sheets. If the teachers in one program are older and have higher salaries, the program productivity cost will be high. This does not mean that a program is less productive than another program. It simply might indicate that teachers were higher-salaried in that program and not how effective the program was in delivering material. This information must not be looked at in a vacuum for any program.

The Automotive Service Technology cost for 1995-1996 is on the next page. This information came from the Institutional Studies Office. However, our corporate option was not included in the calculation due to a check sheet problem. Since two thirds (66%) of our students have taken the corporate option, it is probably more accurate to use the corporate model. Again, during the next two years with the start of the Chrysler program, up to 75% of our students will be taking the corporate options. This will also allow us to evaluate both the corporate and comprehensive program options.

AUTO 291	$59,590.69	226	$263.68	12	$3,164.16

The $2,848.63 and $2,506.79 for AUTO 200, AUTO 250 were taken out of the program cost and the co-op cost of AUTO 291, $3,164.16 was inserted into the total program teaching cost.

CORPORATE MODEL

$14,613.47 Total program Teaching cost	$9,258.05
- 2,848.63 Auto 200	+3,164.16
$11,764.84	$12,422.21/ program credit 68
- 2,506.79 Auto 250	= $182.68
$9,258.05	

66% of our student take the corporate model which the cost per SCH is at $182.68
33% of our students take the comprehensive model which the cost per SCH is at $214.90

Productivity is calculated by institutional studies by course, department, and college not by program. Therefore, there is presently no consistent process to evaluate a program productivity at the university. A consistent process should be developed and use in the program review process.

Ferris State University
Program Teaching Cost 1995 - 1996 (Summer, Fall, and Winter)

Program Name: Automotive Service Technology AAS

College : Technology

Department : Automotive

Total Program Teaching Cost (Assumes a student will complete program in one year) $14,613.47

Cost per SCH (Average for program) $214.90

Program Credits Required (Total credits to graduate) 68

Course ID	Level	FSU's Teaching Cost	FSU's Student Credit Hours (SCH) Produced	Teaching Cost/SCH	Credits Required	Program Teaching Cost
AUTO111	L	$50,204.66	304.00	$165.15	4.00	$660.59
AUTO112	L	$60,795.63	312.00	$194.86	4.00	$779.43
AUTO113	L	$53,205.36	320.00	$166.27	4.00	$665.07
AUTO114	L	$63,483.41	328.00	$193.55	4.00	$774.19
AUTO115	L	$37,176.21	220.00	$168.98	4.00	$675.93
AUTO116	L	$80,850.07	352.00	$229.69	4.00	$918.75
AUTO117	L	$26,234.54	180.00	$145.75	4.00	$582.99
AUTO200	L	$62,669.84	132.00	$474.77	6.00	$2,848.63
AUTO211	L	$41,583.44	172.00	$241.76	4.00	$967.06
AUTO213	L	$36,843.54	168.00	$219.31	4.00	$877.23
AUTO214	L	$49,534.54	228.00	$217.26	4.00	$869.03
AUTO250	L	$62,669.84	150.00	$417.80	6.00	$2,506.79
CULTELE	E	$1,723,377.04	17,035.00	$101.17	3.00	$303.50
ENGL150	L	$691,277.61	6,243.00	$110.73	3.00	$332.19
ENGL250	L	$526,858.51	4,272.00	$123.33	3.00	$369.98
PHYS130	L	$43,464.07	716.00	$60.70	4.00	$242.82
SOCAELE	E	$1,572,854.02	19,718.00	$79.77	3.00	$239.30

SECTION 12

Conclusions

1. **The Automotive Service Technology Program mission is central to the mission of Ferris State University.**

   The mission of the Automotive Service Technology program is to prepare students for the employment in the Auto Service repair field and to be participative members of society.

2. **Uniqueness/Visibility and demand by students**

   These responses reinforce once more the AST Program's ability to produce high-quality, highly-employable graduates. Once more, the large number of those who would consider a Ferris Bachelor's degree in AHM--or who already have earned one--suggests that the program educates as well as trains its students. The current combination of the theoretical and technological phases offered by the AST Program, and the professional and financial success of its graduates, prove this to be a strong, vital program now, and for the future of the university.

3. **Service to State and Nation and demand for graduates:**
   Our labor market analysis from the MOIS indicates a strong demand for our graduates, as evidenced by their placement rate and their high salaries.

   Job Placement/Positions/Salaries from alumni survey(Questions 1-6)

   The survey indicates that nearly 80% (41/52) of the program's graduates have found positions as service technicians (24), service managers (9), or engineers (8). The average length of employment is 2.98 years, and over 92% (48/52) of these jobs are in Michigan. Many of our graduates are working at the corporate level with companies like Borg-Warner, Buick Division GMC, Cummins Diesel, EDS, Eaton, Ford, and Oldsmobile Division GMC. More impressively, over 90% (43/47) of the respondents had no difficulty finding jobs after graduation. Our pre-professional programs with Ford and General Motors, co-op and internship opportunities, and solid reputation in the auto-otive service industry were key factors cited in many of the responses: "there were numerous job offers while I was still in school" and "a degree from Ferris speaks for itself" were typical.

   The average starting salary for AST graduates was $30,127.50. The present salary average reported is $32,785.85. The state average salary for a Auto mechanic is between $21,096 and $33,252. The national average salary is $29,305. According to the MOIS system the skilled technician makes two to three times the inexperienced trainees.

However it should be noted that Ferris State University automotive service graduates start higher then the state and national averages for all technicians. See labor market analysis from MOIS.

4. Quality of Instruction
Program Education/Certification (Questions 7 and 8) from alumni survey

When asked "which phase of your on-campus education (courses, service floor. or co-op was most valuable in preparing you for work," over 50% (26/52) of the respondents indicated that the combination of these three areas was vital to their employment success. The most typical comments cited the necessary blend of classroom theory, hands-on service floor experience, and customer relations skills during dealership co-ops. Of the courses cited, the automotive electronics courses were seen as the most important.

Nearly 65% (34/52) of the respondents were able to obtain ASE/Michigan certificates in all 8 areas. 14 of the 17 who have not been certified in all eight areas have either not yet taken all 8 tests, or have no need to do so for their current jobs. Only one cited poor instruction as the reason for failure in the certification process. These responses strongly suggest that the AST Program's current three-phase approach is effective in fully preparing its graduates for their careers

Effectiveness of AST Course Work (Question 9) from alumni survey

Nearly 71% (37/52) of the respondents rated their classroom preparation good to excellent and 20% (10/47) rated their classroom preparation as adequate. The criticism offered by the other 10% pointed to more work being needed on problem solving and customer relations skills. More often, the comments were highly positive: "my technical knowledge is strong and helped me get a job" and "it was excellent" were typical.

When asked about changes, the respondents' prevailing opinion was to keep the courses as up to date as possible; to offer more hands-on experience; to do more work with electrical and diesel technology; and to stress the differences between the classroom and the real world graduates encounter. Many of these changes are currently being studied as part of this review process. The six different curriculum surveys are being studied by the program's curriculum committee to see what changes, if any, in the curriculum needs to be made.

Again, these responses indicate the classroom phase of the AST Program is highly successful.

5. Service to Non-majors

We offer two courses for non-majors. The first course teaches students how to buy a vehicle , lease one, buy car insurance, etc. The second course is more technical, and deals with some of the new options on vehicles such as air bags.

6. Facilities and equipment

Over 64% (33/52) of the respondents said that the technological equipment used in their courses was up to date. Several commented that they found even newer equipment on the job, but that their experience with AST Program equipment had prepared them for this. Only 2/47 respondents answered no to this question.

Nearly 60% (27/47) of the respondents said that the computers they used and the computer skills they developed during the AST Program were useful in their jobs. The major concerns were on keeping the programs current--especially campus-wide, use of Windows, CD ROM manuals--and requiring computer courses for the two-year program. Only 3/47 answered no to this question.

We have upgraded this year, and most of the AST faculty have at least 486 computers with windows. However, there seems to be a major concern about the lack of computer support from the administration.

Although industry support is very high in equipment and some money, there is concern from the faculty about money in the future for minor caps for building maintenance and improvement. Is there a plan by the administration to replace the money that may be lost if the vocational monies are lost?

7. Library information Resources

Library information resources are good.

8. Faculty: professional and scholarly activities

Faculty are all involved with professional organizations which reflect their respective interests. All faculty serve on many different committees at the program, department, college, and university level. . All faculty are involved in student advising. Many have written papers and presented them. The NACAT (National Association of College Automotive Teachers) meeting will be held at Ferris State University in the year 2000 for the second time in ten years.

9. Administration Effectiveness

Administration has been very successful in obtaining industrial support in terms of equipment donations and scholarships from major corporations. With our donations of vehicles and other equipment, and training from industry, we receive around 2 to 2.5 million dollars in donations every three to five years on a continuing rotational basis. As can be seen, the quality of the Automotive Service Program is financially linked to industry. 70% to 90% of the money it takes to run the Automotive Service Program comes from industry. With the high probability of the vocational funds being eliminated in the near future, the need for a strong tie to industry will be essential for any program at Ferris to be competitive. With the start of the Chrysler CAP program this year we have increased our financial support from another corporation.

Ferris State University is one of three places in the United States that Alternative Fuel Vehicles are being tested. The research started in December and will continue during the winter. A number of our advisory committee members were involved in bringing the project to Ferris.

SECTION 13
RECOMMENDATIONS

Enhance the Program

The program meets or exceeds all criteria and it warrants expansion in enrollment to meet the manpower needs in the State of Michigan as demonstrated by MOIS, employer survey, and the alumni survey. The building is capable of handling more students. There may be a need to hire more part timers , para pros, and if the enrollment dictates it, a full time faculty. At present, we expect an increase of enrollment in the fall of 1997 due the high enrollment this fall. Also with the start of the Ford option next year we expect to increase our enrollment. Likewise, in the fall of 1998 we expect another slight increase in enrollment due to the Chrysler option starting it's first full start of students. Chrysler would like us to start a sequence of students every year. If the student demand will support Chrysler wishes, then we would have another increase in enrollment. At this date over last year we have three times the students signed up for the fall of 1997. If only half of these indicators come true we will still have to hire faculty to handle the load. At this time no further office support or staff would be needed to support the program and building. Since 70% to 90% of our money to operate the program comes from outside the university, there would be very little cost associated with a steady expansion in enrollment. However, if the vocational funds are eliminated, the university would need to find a source of money for all the technology programs.

Please read Appendix A pages 173-181. The Automotive Service Technology program is one of the key programs at the university. The program started in 1952 with 20 students and one teacher and is now one of the three departments that make up the largest college in the university. The Automotive Service Technology program was the parent program for all the other programs in the Automotive and Heavy Equipment department. From this program you can see what other program have been developed. Many new options and directions have been implement in the last few years. These new directions taken in the past few years have made the auto service program one of the best sponsored programs by outside industry at Ferris. These links to business and industry for financial support are crucial for any program at Ferris to keep up with the rapid advances in technology.

1952	Auto Service
1955	Auto Body
1956	Heavy Equipment Service Auto Machine
1988	G.M. ASEP option
1991	Ford ASSET option
1996	Chrysler CAP option
1971	B.S. Automotive and Heavy Equipment Management
1994	B.S. Heavy Equipment Service Engineering Technology
1996	BS Automotive and Heavy Equipment Management offered at Macomb Community College University Center

The auto service faculty have been very involved in new curriculum development with the addition of the G.M. , Ford, and Chrysler options in 1988,1991, and 1996 respectively. The faculty started in 1987 to bring the corporate options into the auto service program. We receive well over $200,000 per year in vehicle donations alone, plus training material , equipment, manuals, engines, tools and faculty update training. If you look in Appendix A pages 190-232 you will see a training history that is attached behind each faculty's vita. Auto service faculty have one of the model faculty development programs at Ferris. Many of them are multiple pages in length of the courses they attended every year. Again all of the development is paid by the corporation not Ferris. The department pays for the travel and many of the faculty pay for their meals. If you will look at pages 5 and 6 you will see the Ferris Auto Service Program model along with the new corporate model that G.M. started to sponsor in 1996. To my knowledge Ferris is the only school in the United States to have all three corporate options and the four year automotive degree option. Also, Ferris students can also chooses to go into education, small business management, along with many other offerings at Ferris.

We need to work on the enrollment into the comprehensive program with continued recruiting. This program option is the largest feeder into the B.S. degree in Automotive and Heavy Equipment Management. This program has been the largest B.S. program in the college of technology for 25 years. Now I think plastic graduates a few more students. Therefore, it is critical to increase the largest feeder program to maintain and increase one of the university's most sought after B.S. degrees. This can be demonstrated by Macomb Community College coming to Ferris and asking the university to bring the Automotive and Heavy Equipment program to Macomb. Macomb is the fourth largest community college in the United States. Ferris needs to make more 2+2 ties with Macomb and other large community colleges

As can be seen the automotive service technology program is a very large complex program responsible for the creation of a department. It is the backbone of the bachelor program. With out the Automotive Service program it is very questionable if the bachelor program could survive on transfer students.

Automotive Service Technology

APRC 1996-1997

section 4 of 4

APPENDIX A

PROGRAM PROFILE

Program: Automotive Service Technology
Department: Transportation and Electronics
College: Technology

1. Purpose of the program:

A. Describe the goals and objectives of the Program (Refer to the role and mission statement of the program):

The mission of the Automotive Service Technology program is to prepare students for employment in the Auto Service repair field and to be participative members of society.

Goals:
To provide students in the Automotive Service Technology program the necessary skills that will enable them to be successful automotive repair technicians.

To provide educational opportunities to non-traditional students equivalent to that offered to traditional students.

To provide advisement and counseling to the students to help them achieve their career goals.

To maintain a high level of faculty expertise through faculty development seminars and training sessions.

To maintain close relationships with the auto service industry to verify curriculum and enhance graduate placement opportunities.

Outcomes:
Graduates of the Automotive Service Technology program will continue to be in high demand by industry.

Enrollment in the Automotive Service Technology program will continue to grow so that program quotas will be achieved in five years.

Graduates of the Automotive Service Technology program will have the skills for employment in the automotive service industry.

Graduates of the Automotive Service Technology program will be educationally prepared to continue their education if they desire.

The Automotive Service Technology program will continue to be a national leader in the preparation of technicians and managers for the automotive service repair industry.

The Automotive Service Technology program will continue to cooperate with industry to provide corporate sponsored technician training programs and we will strive to expand these operations.

The Automotive Service Technology program will continue to enhance its position as a model and a resource for other programs of this type.

B. How is the program compatible with the role and mission statement of FSU?

The mission of the Automotive Service Technology program is to prepare students for employment in the Auto Service repair field and to be participate members of society.

The program is very compatible with the role and mission of the University. With three large manufactures both sponsoring and employing our auto service program graduates demonstrates a very direct career path for our students.

C. How is the program integrated/coordinated with other programs at FSU?

The mission of the College of Technology is to educate students in a spectrum of technical programs critical to Michigan's economic future and to provide technical support to business and industry through the Technology Transfer Center (TTC). This curricula spectrum of engineering,engineering technology, technology management, and technical specialty programming integrates the appropriate general education courses needed to prepare today's graduates with a foundation of knowledge required to cope with advancing technology within their professional careers.

The College of Technology is committed to providing its diverse student body with strong technical curricula emphasizing practical, usable skills that prepare the graduate to analyze, synthesize and problem-solve within their discipline. This is accomplished in an environment which is one of respect for our students and their field of study. Students are perceived as being customers who have enrolled in programs to become employable and prepared for advancement in their chosen careers after graduation.

The college takes this trust seriously, and provides curriculum laddering options for two-year A.A.S. degree program graduates to transfer into four-year B.S. degree programs.

Goals

1. Provide A.A.S. and B.S. graduates the skills and knowledge to be employable and advance within their field of study and improve their educational options after graduation.

2. Serve the part-time student through outreach activities such as those offered at the Applied Technology Center (ATC).

3. Provide experience and application to support lecture/lab-based instruction through interning and co-op activities, plus senior capstone courses in each academic program.

4. Develop a sense of professionalism within the student by encouraging professional student association activities within the student's chosen field of study.

5. Provide applied research for business and industry and faculty development projects. via Technology Transfer Center (TTC) activities. Such activities would include training, product development, manufacturing process improvement, and prototype development.

Purposes

1. Follow-up studies of graduates one year, three years, five years, and eight years after graduation will measure graduates' employment and educational achievements.

2. Part-time student enrollment and program options at the Applied Technology Center will reflect the education and training needs of greater metro Grand Rapids.

3. Student interning and co-op options will satisfy the programmatic needs of the academic programs.

4. Senior capstone courses will utilize the knowledge base learned in the degree program solving skills relevant to the industry-related discipline. The program advisory committees and sponsoring industries will be involved in project evaluation.

5. Student membership in disciple-related student professional associations will be expanded through industry sponsorship and student/faculty involvement.

6. The Technology Transfer Center will expand by involving faculty and students in such items as technical training, product and process development, and prototyping activities of the College of Technology.

D. How is the program integrated/coordinated with other programs at other institutions?

Our program is a associate degree program. All general education requirements for our program is supplied by many other departments such math, English, etc.. Having an associate degree allows for transfer students from other colleges to receive credit both in general education and the major program area. The auto service program is set up as the first two years of the automotive and heavy equipment management bachelor degree. This allows other colleges to transfer students strait into the Bachelor program.

There are only so many corporate programs allowed by the manufactures in each state. For example Ferris has one of the two Chrysler programs in the state.

E. How does the program serve society at the community, state, nation, and world?

History

The Automotive Service Technology program started in 1952 in a wing of the Trade and Industrial Center on the Ferris State University campus. When the program began, it occupied approximately 10,600 sq. ft. There was one faculty member and 20 students. The Automotive Service Technology program was the parent program for all the other programs in the Automotive and Heavy Equipment department.

Facilities

Presently the Automotive Service Technology program occupies approximately 57,000 sq.ft. in the Automotive Center building. This facility had a major remodel in 1988 to better accommodate the automotive programs.

One of the major features of the Automotive Service Technology program at Ferris State University is the service floor operation. This 13,300 sq.ft. service shop is designed to operate much like a dealership service department.

The vehicles that are worked on in this shop are mainly provided by service customers and the work is done by automotive students and supervised by the faculty.

Staff

The Automotive Service Technology program has a staff of 12 full-time faculty members, all with extensive industry background and teaching experience. All of the faculty have baccalaureate degrees and many have advanced degrees. In addition, each faculty member receives 20 to 40 hours of additional technical training each year. In addition to the teaching faculty, there are two support technicians in the Automotive and Heavy Equipment department who repair equipment and help develop training aides.

Students

There are approximately 150 full-time students in the Automotive Service Technology program at any time in the normal school year. Students can enter the program fall and winter terms. 70 to 80 students graduate annually. The majority of the students come from Michigan but there are students from several other states and even from other countries.

Education

The education that is provided in the Automotive Service Technology program is representative of the high technology level that is demanded by the automotive service industry. The students are trained in the use of the latest diagnostic equipment and repair tools. They are instructed in the fundamental skills that are needed to use the high technology equipment. They receive both theory education and hands-on application. The Automotive Service Technology program is constantly being upgraded to meet the needs of industry both in the areas of education and equipment. There are options within the Automotive Service program that allow the student to take manufacturer specific courses and participate in dealership sponsored work experience. The General Motors sponsored program is called ASEP, the Ford sponsored program is ASSET and the Chrysler sponsored program is CAP. The important elements of the student's education such as mathematics and English are provided by other divisions of Ferris State University. The Automotive Service Technology program has a dynamic and highly qualified advisory committee which provides input on an ongoing basis concerning the operation of the program.

Job Opportunities

There is a very high demand for graduates of the Automotive Service Technology program. Most of the students have several job offers on completion of the program.

The typical job for a graduate would be performing repairs on late model automobiles in a medium to large dealership service department or major repair facility. The pay is excellent, with starting salaries in the $20,000 to $26,000 range and there is room for advancement. Many of the graduates of the Automotive Service Technology program elect to continue their education and pursue a Baccalaureate degree in Automotive & Heavy Equipment Management,Teacher Education or some other field.

Scholarships

In addition to the normal academic and financial need scholarships, the Automotive Service Industry Association, the Specialty Equipment Market Association, and the Felpro Corporation have scholarships available to qualified students.

Budget and Revenue

The general fund operating (S&E) budget for the program has continued to decrease over the past five years. We have been fortunate to obtain major donations of vehicles, training materials, equipment and cash from Ford, General Motors, Chrysler and alumni and various other sources. These donations enable us to continue to operate one of the most highly respected post-secondary automotive service programs in the nation. The Automotive Service Technology program service floor operation also brings additional funds we use to help operate the program.

Enrollment Trends

we had one year that with a slight decline in enrollment numbers. We have seen a significant increase in numbers of incoming students in the last two years. Our faculty and staff have made a major effort in recruiting new students to the program. And with the start of the Chrysler option in the program we expect to increase our enrollment. As industry continues to demand a well-educated graduate we see the enrollment increase trend continuing.

Future Trends

Closer ties with the major auto manufacturers will be the key to the future of the Automotive Service Technology programs. We will be starting the Chrysler CAP program this fall. We are also planning on increasing the number of students that will be doing industry sponsored co-ops and intern-ships. We also plan to increase our level of faculty development activities. If enrollments continue to increase, we will have to consider hiring addition faculty.

II. Resources of the program:

The majority of our resources come from industry except for our salaries.

A. Personnel:

1. Faculty: List by rank with degrees (including year, field of study, and institution), certificates, and/or related work experience.

a. Tenure-Track - 12 Automotive Service Faculty:

(1) Peter Alley, Associate Professor
Master of Science Degree, Occupational Education, FSU,
1992 Bachelors of Science Degree, Trade Technical
Education, FSU, 1976 Assoc. of Applied Science Degree,
Automotive Technology, FSU, 1969

(2) Rexford Billings, Associate Professor
Associate Degree, Automotive Service Technology,
Montcalm Community College, Sidney, Michigan, 1979.
Bachelor of Science in Trade Technical Education, FSU, 1981.
Masters Degree in Occupational Education, FSU, 1988.

(3) W. Charles Bonning, Associate Professor
AAS Degree, Print, FSU, 1976.
AAS Degree, Auto Service, FSU, 1978.
Bachelor of Science Degree, Technical Education, FSU, 1978.
Masters Degree, Technical Education, Michigan State University, 1986.

(4) John Ronald Gahrs, Professor
Associate in Applied Science Degree, Automotive Technology, Henry
Ford Community College, 1965.
Bachelor of Science in Trade Technical Education, FSU, 1973.

(5) Michael Hachman, Associate Professor
Certificate, Automotive Machine, FSU, 1967.
A.A.S. Degree, Automotive Service, FSU, 1969.
Masters Degree, Michigan State University, 1986.

(6) Greg Key, Professor
Bachelor of Science Degree, Western Michigan University, Industrial
Education, 1978.
Major: Power Automotive
Minor: General Industrial Education
Master of Science Degree, Eastern Michigan University, Industrial
Technology Manufacturing, 1986.

(7) Ronald L. Neiderheide, Technical Instructor
Associate Degree, Automotive Service, FSU, 1967.
Bachelor of Science Degree, Teacher Education, FSU, 1970.

(8) Jimmie L. Norrington, Professor
Certificate, Automotive Machine, FSU, 1967.
Associate Degree, Automotive Service Technology, FSU, 1968.
Bachelor of Science in Trade-Technical Education, FSU, 1973.

(9) David H. Payton, Professor
Leadership Development Program, University of Michigan, 1973.
Associate Degree in Automotive Service, FSU, 1965.
Bachelor of Science Degree, Eastern Michigan University 1961.
Master of Science Degree, University of Michigan, 1964.

(10) William Routley, Professor
Associate Degree, FSU, 1968.
Bachelor of Science, Trade Technical Education, FSU, 1970.
M.A., Educational Administration, Central Michigan University, 1980.

(11) Ronald A. Tuuri, Associate Professor
Bachelor of Science Degree, Vocational Education, University of Wisconsin, Stout, 1977.
Master of Science Degree, Vocational Education, University of Wisconsin, Stout, 1984.

(12) William D. Wagner, Assistant Professor
Associate in Applied Science Degree, FSU, 1972.
Bachelor of Science Degree, Teacher Education, FSU, 1978.

VITAE for each faculty member see Attachment A.

b. Adjunct - None
c. Temporary - None

2. FTE overload

3. Off-campus programs: location and involvement of faculty. none

4. Administration: degrees including year, field of study, and institution), certificates, and/or related work experience.

One Department Head:

L. Jack Richards, Professor Acting Department Head
Bachelor of Science Degree, Trade Technical Education, FSU 1972.
Leadership Development Program, School of Education, University of Michigan, 1974.
Master of Science Degree, Occupational Education and Administration, University of Michigan, 1977.

See resume for L. Jack Richards Attachment B

5. **Support staff (clerical, technical, ...)**
2 Account Clerks, 1 Secretary, 1 Equipment Repair Technician

6. **Student assistants.**
4 student workers

7. **Advisory Committee: Names, affiliations, and positions of the membership.**
See Attachment C

B. Instructional resources:

1. **Describe, in general, the facilities (classroom, lab, clinic, etc.) and equipment available to the program.**

The Automotive Center houses 10 Automotive Service Labs and and six Automotive Classrooms, a Service Floor, Parts Crib, Parts Storage, Equipment Repair Room, Administrative Offices, a Manual Reference and Video Room, Automotive and Heavy Equipment Management Offices as well as the Auto Body Labs. See Attachment D.

2. **Supplies and expense budget.** $14,500.00

3. **Equipment acquisition budget** $34,881.00

Appendix F

EVALUATION PLAN FORMAT

Program: Automotive Service Technology

Degrees Awarded by Program: Associate in Applied Science Degree

Program Review Panel:

Chair: Greg Key, Professor
Acting Department Head: Jack Richards
Program Faculty: Charles Bonning, Associate Professor &
Ron Tuuri, Associate Professor
Advisory Committee Member: Donald Walcheski
Faculty Outside College of Technology:
Andrew Richard Anderson, Associate Professor, Languages & Literature

Purpose:

To conduct a study of the Automotive Service Technology program to evaluate its needs and effectiveness, so the university can make an informed decision about the program.

Data Collection Techniques and Information Sources:

A. Graduate Follow-up Survey: Will use College of Technology Graduate Survey.

B. Employer Survey: Will survey our employers.

C. Student Evaluation: Will be done in the fall of 1996 using a survey.

D. Faculty Perceptions of the Program: Will be done by a questionnaire in the fall of 1996.

E. Advisory Committee Perceptions of the Program: Will be done by a questionnaire to the Advisory Committee Members.

F. Labor Market Analysis: Will use MOIS.

G. Evaluation of Facilities and Equipment: Will be done by reviewing the Automotive Center equipment and the library and computer resources.

H. Curriculum Evaluation: Will be done with a survey by the Automotive Service Technology Curriculum Committee.

Appendix F (Continued)

Schedule of Events:

Activity	*Leader*	*Target Dates*
Graduate Follow Up Survey	Richard Anderson	November 15, 1996
Employer Follow-Up Survey	Ron Tuuri	November 15, 1996
Student Evaluation of Instruction	W. Charles Bonning	November 15, 1996
Faculty Perceptions	W. Charles Bonning	November 15, 1996
Advisory Committee Perceptions	Donald Walcheski	November 15, 1996
Labor Market Demand Analysis	Greg Key	November 15, 1996
Evaluation of Facilities & Equipment	Jack Richards	November 15, 1996
Curriculum Review	Ron Tuuri	November 15, 1996

_____

Signature of the Chair, PRP

AUTOMOTIVE & HEAVY EQUIPMENT DEPARTMENT

MEMORANDUM

TO: Doug Haneline, Chair, Academic Program Review Council

FROM: Greg Key, Professor & Jack Richards, Acting Dept. Head, Automotive and Heavy Equipment Department

SUBJ: Proposed Budget for the Automotive Service Technology Program Review

DATE: July 12, 1996

We are submitting this proposed budget for the Automotive Service Technology program review.

Student, advisory committee and faculty surveys	$215
Printing, copying and mailing costs	$225
Student wages (30 hrs @ $4.50 per hr.)	$135
Final document production	$150
Total	$725

DEPARTMENT OF LANGUAGES AND LITERATURE
FERRIS STATE UNIVERSITY
Big Rapids, Michigan 49307

To: Greg Key, Chair, Automotive Service Program Review Panel

From: Doug Haneline, APRC Chair DLH

Subject: Plan, Panel, Budget Documents for Program Review

Date: August 2, 1996

The Academic Program Review Council has approved your program evaluation plan and your study panel. The Office of Academic Affairs has approved your proposed budget. To arrange for the transfer of funds into your department's account, please call Linda Golden in Academic Affairs at x3857.

Twelve copies of the panel report are due Tuesday, December 17, 1996. The copies should come directly to me. During January and February 1997 APRC will meet to review each program. During that time we will want to meet with the panel to discuss the report.

Thank you for taking time out of your summer to move the program review process forward.

cc: Jack Richards, Automotive and Heavy Equipment Department
Tom Oldfield, Academic Affairs

1996 AUTOMOTIVE SERVICE ADVISORY COMMITTEE

Joseph C. Barney, Jr.
Ford Customer Service Division
1655 Fairlane Drive, Room 2110
Allen Park, MI 48101
(313) 945-8438
Fax: (313) 390-8727

Term: 1996-97-98

Ken Betz
Test Development Engineer
Chrysler Motors
c/o 13959 Riker Road
Chelsea, MI 48118

Term: 1994-95-96

Jim Colyer, Manager
Technical Services
Pontiac Motor Divison
One Pontiac Plaza
Pontiac, MI 48035
(810) 857-1566

Term: 1996-97-98

Patrick Kelly
Department of Transportation
51885 Grape Road
Granger, IN 46530
(219) 272-3649 - home
(219) 674-8836 - work

Term: 1994-95-96

Robert Tenbusch, Supervisor of Development
Lakes Technical Center
General Motors Corporation
4100 S. Saginaw
Flint, MI 48557-03

Term: 1994-95-96

Phil Valinski
Service Manager
Duthler Ford
555 - 28th Street, S.E.
Grand Rapids, MI 49548
(616) 246-5291, ext. 251

Term: 1995-96-97

Don Walcheski
Quality Car and Truck Repair
530 West Avenue
Big Rapids, MI 49307

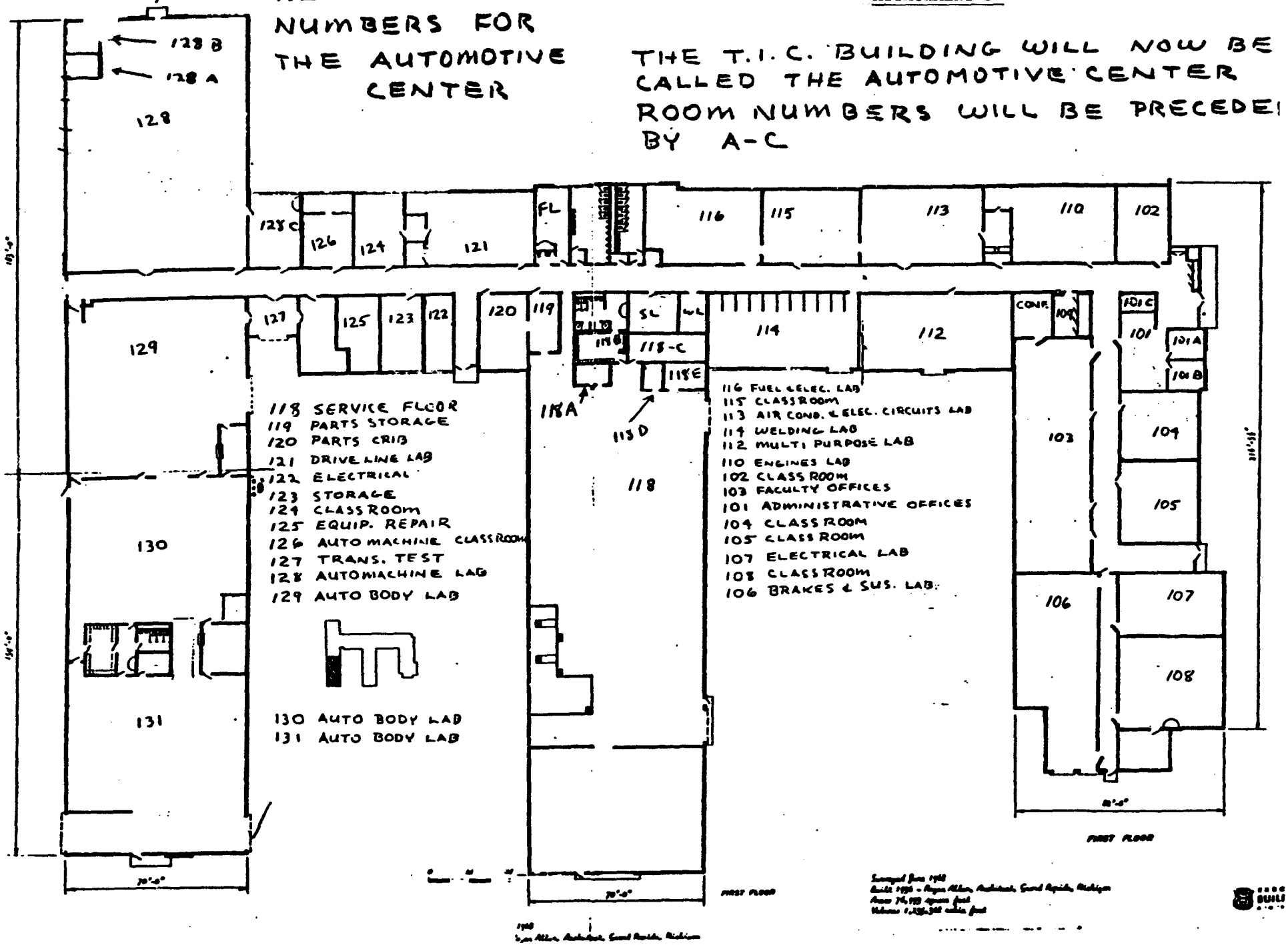
Term: 1995-96-97

6-24-88

ATTACHMENT D

NEW ROOM NUMBERS FOR THE AUTOMOTIVE CENTER

THE T.I.C. BUILDING WILL NOW BE CALLED THE AUTOMOTIVE CENTER ROOM NUMBERS WILL BE PRECEDE BY A-C



SECTION C: INSTRUCTOR(s):

Name: PETER ALLEY
Chassis Electrical, Engine Tune-up, Alignment and Suspension, Brakes, Engine Repair
ASE certification: Master Technician

Name: REX BILLINGS
Engine Repair, Driveability, Electrical, Air Conditioning, Chassis Electrical
ASE certification: Master Technician

Name: CHARLES BONNING
Air Conditioning, Engine Repair, Electrical, Driveability, Drivelines
ASE certification: Master Technician

Name: JOHN GAHRS
Driveability, Electrical, Chassis Electrical, Engine Tune-up
ASE certification: A6, A8, L1

Name: MICHAEL HACHMAN
Engines, Drivelines, Electrical, Brakes, Alignment
ASE certification: (In process)

Name: GREG KEY
Electrical Driveability, Engine Tune-up, Alignment, Air Conditioning
ASE certification: A1, A4, A5, A6, A7, A8

Name: RON NEIDERHEIDE
Engine Repair, Drivelines
ASE certification: A1, A3

Name: JIM NORRINGTON
Electrical, Air Conditioning, Driveability, Engine Tune-up
ASE certification: Master Technician

Name: DAVE PAYTON
Chassis Electrical, Air Conditioning, Engine Repair, Driveability
ASE certification: A6, A7, A8

Name: WILLIAM ROUTLEY
Engines, Electrical, Drivelines, Driveability, Brakes, Suspensions
ASE certification: Master Technician

Name: RON TUURI
Manual Drivelines, Automatic Transmissions, Air Conditioning
ASE certification: Master Technician

Name: WILLIAM WAGNER
Engines, Drivelines, Electrical, Automatic Transmissions
ASE certification: (In process)

PETER ALLEY

MAJOR US ARMY RESERVE (RET)

20795 Ross Parkway
Big Rapids, MI 49307
616 796 5921 (h)
616 595 2353 (w)

PROFESSIONAL EDUCATION:

Master of Science Degree Occupational Education	Ferris State University	1992
Bachelors of Science Degree Trade Technical Education	Ferris State University	1976
Associates of Applied Science Degree Automotive Technology	Ferris State University	1969

TECHNICAL / LEADERSHIP EDUCATION:

Army Officers Advance Course
Initial Entry Helicopter Pilot Training
Army Officers Basic Course
OH58 Helicopter Mechanic
Mobil Power Generator Mechanic/Operator
Basic Combat Training
See Appendix A

INDUSTRY AND TEACHING EXPERIENCE:

Ferris State University — Big Rapids, MI — 1977 to present
Associate Professor Automotive Technology
Courses Taught: Service Area, Engines, Chassis Electrical, Engine Electrical, Air Conditioning.
Lead Instructor in the Suspension and Alignment and Brakes Service Area.

ST Johns Public School — ST Johns, MI — 1973 to 1977
Vocational Auto Instructor
VICA Instructor

University Oldsmobile — Lansing, MI — 1969 to 1973
Automobile Technician / Shop Foreman
Supervised the work flow and approximately 10 technicians

FERRIS STATE UNIVERSITY SUMMARY:

During my tenure at Ferris I have served as a board member to the executive board of the FFA, a representative to the RFAC (Representative Faculty Advisory Council), a charter member of the Ferris Academic Senate, represented the Auto Program on the Ferris Centennial Committee, Chaired the Auto Body Curriculum Review Committee, served on the College of Technology Recruiting Committee. Contributions to the Automotive and Heavy Equipment Department include but are not limited to being assigned the lead instructor in the brake, alignment and suspension area, major curriculum review and rewriting of the course material for these two areas including the development of two lecture lab guides sold in the bookstore to assist students in the learning process. I also served on the department semester transition committee and the Tech Prep (high school articulation) committee which lead to the first articulation agreement for the department. Have maintained industry contacts which resulted in a donation for the purchase of new alignment equipment. Served as the ASSET Coordinator for one semester which involved supervising interns, recruiting students and maintaining industry contacts.

From 1991 I have chaired the department recruiting committee. During this time the department faculty, under my direction, have visited several hundred high school programs making presentations to many students. We have conducted three very successful Technician of the Future day events. Technician of the Future Day draws hundreds of high school faculty and students from all over the State of Michigan to an open house to see our programs and what we have to offer. The recruiting committee has conducted three high school faculty update training seminars . This year we had almost 70 high school faculty in attendance. I have visited over 100 high schools and made presentations to approximately 1400 students.

FERRIS EXPERIENCE:

FFA Executive Board Member
RFAC College of Technology Representative
Ferris Academic Senator College of Technology
College of Technology Recruiting Committee
Automotive Program Semester Transition Committee
Auto Body Curriculum Review Committee
Automotive and Heavy Equipment Department Recruiting Committee

PROFESSIONAL ASSOCIATIONS:

ASE (Automotive Service Excellence) Certified Master Automotive Service Technician

NACAT (North American Council of Automotive Teachers)

COMMUNITY SERVICE:

Active Member of Trinity Evangelical Free Church

Chaired the Robin Hood Airport Development Council

Served as a Big Rapids Little League Coach

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:52 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
P. H. ALLEY
SELECT: F 380-48-3224
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COU. NUMBER		COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01		AUTO: ENGINE REPAIR	06/30/98			
ASEAUT02		AUTO: AUTOMATIC TRANS/TRANSAXLE	06/30/98			
ASEAUT03		AUTO: MANUAL DRIVETRAIN & AXLES	06/30/98			
ASEAUT04		AUTO: SUSPENSION & STEERING	06/30/98			
ASEAUT05		AUTO: BRAKES	06/30/98			
ASEAUT06		AUTO: ELECTRICAL SYSTEMS	06/30/98			
ASEAUT07		AUTO: HEATING & AIR CONDITIONING	06/30/98			
ASEAUT08		AUTO: ENGINE PERFORMANCE	06/30/98			
50396.13		PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	02/08/96	99	IV	2
18001.11		ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
50395.03		LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/16/95	99	00	2
50395.00		1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
50395.01		1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/06/95	99	00	4
55205.10		DELCO MORAINE ABS VI WITH TRACTION CONTROL	01/20/95	99	00	2
17002.04		4T60/4T60E 4-SPEED AUTOMATIC TRANSAXLE	08/01/94	01	M	32
50394.21		CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/23/94	99	00	4
50394.20		CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.23		CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	05/18/94	99	00	4
50394.25		CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	05/10/94	99	00	4
50394.28		CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
13003.03		CADILLAC CHASSIS ELECTRONIC SYSTEMS	04/06/94	01	00	8
46009.10		FUEL INJECTION EFI/PFI - TEST-OUT	03/31/94	01	00	2
16014.11		4.0L/4.6L ENGINE MECHANICAL	02/09/94	01	00	16
14003.04		ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
55205		DELCO MORAINE ABS 6 - ESB	11/30/93	99	00	2
53404.[illegible]		SPEED DEPENDENT DAMPING	11/26/93	99	00	2
53404.00	(INC)	SPEED DEPENDENT DAMPING	10/22/93	99	00	2
55205.05		DELCO MORAINE ABS VI	10/12/93	99	00	2
55205.04		TEVES MARK IV ANTILOCK BRAKE SYSTEM	10/08/93	99	00	2
55205.03		BOSCH ABS III WITH TRACTION CONTROL	10/02/93	99	00	2
55205.09	(INC)	DELCO MORAINE ABS 6 - ESB	09/28/93	99	00	2
13003.02		BOSCH 2U/5 ABS/TCS	05/06/93	09	00	8
15005.08		BOSCH 2U & 2S ABS	05/05/93	09	00	8
15005.05		FOUR WHEEL ANTILOCK BRAKES (4WAL)	05/04/93	09	00	8
13002.02		VIBRATION CORRECTION	02/23/93	38	C	16
18005.06		APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
10392.00		1992 MODEL NEW FEATURES	10/04/91	01	00	8
66009.19		4.3L CENTRAL PORT FUEL INJECTION	10/03/91	01	00	8
15005.04		DELCO MORAINE III ANTILOCK BRAKE SYSTEM - 198	04/17/91	38	00	8
15005.05		FOUR WHEEL ANTILOCK BRAKES (4WAL)	04/16/91	38	00	8
16009.10		FUEL INJECTION EFI/PFI	03/12/91	38	00	16
13003.00		SUSPENSION, ALIGNMENT AND WHEEL BALANCE	10/25/90	01	00	16
15005.07		TEVES II ABS	06/19/90	01	00	8
13002.01		VIBRATION DIAGNOSIS AND REPAIR	06/18/90	01	00	8
19007.02		WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
11004.01		AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8
16009.11		FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
15005.04		DELCO MORAINE III ANTILOCK BRAKE SYSTEM - 198	10/21/88	02	00	8
16018.10		TECH 1 FAMILIARIZATION	10/20/88	02	00	8
15005.02		TEVES ELECTRONIC BRAKE CONTROL	03/04/88	38	00	8
18001.02		SPECIALIZED ELECTRONICS TRAINING	10/21/86	01	Z	2

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:52 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 2
P. H. ALLEY
SELECT: F 380-48-3224
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC LOC HRS

TRAINING CENTER CLASSES CURRENT YTD HOURS: 0
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 96
CPT CURRENT YTD HOURS: 2
CPT PREV 3 YRS AND CURRENT HOURS: 44

*** END OF REPORT ***

VITA
REXFORD D. BILLINGS

EDUCATION:

Masters Degree in Occupational Education, Ferris State University, Big Rapids, Michigan, 1988

Bachelor of Science in Trade-Technical Education, Ferris State University, Big Rapids, Michigan, 1981.

Associate Degree, Automotive Service Technology, Montcalm Community College, Sidney, Michigan, 1979

Industrial Electronics Technology courses, Ferris State University:
EET 114 DC Circuits

WORK EXPERIENCE:

Automotive Technician, Summer 1987, Art Springsteen's Sons, Inc., Dowagiac, Michigan
One year Automotive Technician, Bookwalter, Motor Sales, Stanton, Michigan.
Automotive Technician, Summer 1979, Beardslee Oldsmobile, Sheridan, Michigan.

TEACHING EXPERIENCE:

Associate Professor, Ferris State University, Big Rapids, Michigan, 1988 to present. Areas of concentration:

1. AUTO 117 Electronic Fuel Management Systems
2. AUTO 116 Engine Electrical
3. AUTO 113 Basic Electricity/Electronics
4. AUTO 200 and 250 Auto Service Floor
5. ABOD 215 Body Electrical and Air Conditioning
6. AUTO 112 Automotive Brake Systems
7. AUTO 214 Automotive Heating and Air Conditioning
8. ATSR 201 The Automobile and the Consumer

Full-time Automotive Instructor, Southwestern Michigan College, Dowagiac, Michigan 8/1983 to 5/1988.

Certified General Motors Michigan Affiliation Program Instructor. Southwestern Michigan College, 9/1987 to 8/1988. Taught the following aftermarket courses:

1. GM Set 18.001.02
2. CCC Fundamentals 16016.05
3. CCC Advanced 16016.06
4. EFI/Emissions 16020.00/16004.00
5. EFI 16009.02

Taught Automatic Transmission Course, Kent Skills Center, Grand Rapids, Michigan, 6/1983.
Industrial Maintenance Instructor, Montcalm Area Career Center, Sidney, Michigan 9/1981 to 6/1983.
Small Engine Instructor, Montcalm Community College, Sidney, Michigan 9/19/81 to 12/19/81
Taught Steering and Suspension Systems, Montcalm Community College, Sidney, Michigan 5/80 to 8/80.

COMMITTEE PARTICIPATION:

Technician of the Future Day Planning Committee
Recruiting Committee
Academic Senate 1992-93
Outcomes Assessment Council 1994-95
College of Technology Curriculum Committee 1990-92
Auto Service Tool and Equipment Committee 1993-94
College of Technology Promotion Committee 9/1995-present

PRESENTATIONS:

Electronic Fuel Systems and Active Suspension Systems presented to Sealed Power Corporation
Summer 1995

"Back to the Future" Technology and Industry Conference
March 1992

Trends Conference on Occupational Studies entitled Specialized Electronics Fundamentals Training to Michigan Community College Educators
November 14, 1989

Specialized Electronics Training Fundamentals to Ferris Automotive Faculty
Summer 1988

OTHER:

Master ASE Certified Technician 1990-present
Administering the Michigan Occupational Competency Assessment Center (MOCAC) Exam 1988-present
Supervised students at State and National VICA competition. 9/95-present
Attended Chrysler OBDII Training-9/96
Attended Ford New Generation Star Training, and Service Bay Diagnostic Training Summer 1995

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:53 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
R. D. BILLINGS
SELECT: F 366-66-0399
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/99			
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	06/30/99			
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	06/30/99			
ASEAUT04	AUTO: SUSPENSION & STEERING	06/30/99			
ASEAUT05	AUTO: BRAKES	06/30/99			
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/99			
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	06/30/99			
ASEAUT08	AUTO: ENGINE PERFORMANCE	06/30/99			
16018.15	TECH 2 FAMILIARIZATION	08/16/96	01	M	8
16030.02	ON BOARD DIAGNOSTICS GENERATION II	08/13/96	01	M	24
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	02/29/96	99	IV	2
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02/29/96	99	IV	2
50396.11	OLDSMOBILE NEW MODEL FEATURES PULSAT TELECAST	02/29/96	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	02/29/96	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	02/23/96	99	IV	2
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
51010.15	134A RETROFIT FOR GM CARS AND TRUCKS	04/27/95	99	00	2
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/16/95	99	00	2
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/07/95	99	00	4
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/06/95	99	00	4
16030.00	ON-BOARD DIAGNOSTICS GENERATION TWO FOR 1995	02/09/95	38	C	16
16004.10	VEHICLE EMISSIONS, ENHANCED TESTING, AND DIAG	12/15/94	38	C	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	06/07/94	38	00	64
50394.[illegible]	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/24/94	99	00	4
50394	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.[illegible]	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	05/18/94	99	00	4
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	05/10/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
13003.03	CADILLAC CHASSIS ELECTRONIC SYSTEMS	04/06/94	01	00	8
16014.11	4.0L/4.6L ENGINE MECHANICAL	02/09/94	01	00	16
56500.00	3100 SFI OLDSMOBILE VERSION	10/07/93	99	00	2
56488.03	HIGH OUTPUT QUAD 4 ENGINE - ELECTRONIC CONTRO	09/27/93	99	00	2
50394.10	NEW MODEL FEATUES FOR S/T PICK-UP TRUCK	09/01/93	99	00	4
16009.18	LT1/L99 FUEL & EMISSIONS	07/13/93	38	00	8
15005.08	BOSCH 2U & 2S ABS	06/18/93	38	00	8
16009.10	FUEL INJECTION EFI/PFI	06/15/93	38	00	24
55205.05	DELCO MORAINE ABS VI	04/19/93	99	00	2
56010.00	SERVICE PROGRAMMING SYSTEM	03/08/93	99	00	2
16022.01	4.6L "NORTHSTAR" POWERTRAIN CONTROLS	01/26/93	38	00	16
16009.19	4.3L CENTRAL PORT FUEL INJECTION	05/08/92	38	N	8
13002.02	VIBRATION CORRECTION	11/21/91	01	M	16
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
16791.23	DRIVEABILITY SEMINAR - 4-CYLINDER FUEL INJECT	10/02/91	01	00	4
16791.24	DRIVEABILITY SEMINAR - FUELS & DRIVEABILITY	10/02/91	01	00	4
16790.12	DRIVEABILITY SEMINAR - 3.0/3.8/3300/3800	10/01/91	01	00	4
16791.21	DRIVEABILITY SEMINAR - 2.8L/3.1L/3.4L V6 ENGI	10/01/91	01	00	4
22008.20	DRIVER/PASSENGER SUPPLEMENTAL INFLATABLE REST	09/30/91	01	00	8
16009.10	FUEL INJECTION EFI/PFI	02/26/91	38	00	16
16009.17	3.4L FUEL AND EMISSIONS	12/07/90	01	00	8
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	12/05/90	01	00	16
19007.02	WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
11004	AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8

R. D. BILLINGS

SELECT: F 366-66-0399

FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
16009.11	FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
13002.01	VIBRATION DIAGNOSIS AND REPAIR	04/09/90	38	00	8
15005.05	FOUR WHEEL ANTILOCK BRAKES (4WAL)	03/02/90	38	00	8
22008.12	CHEVROLET SUPPLEMENTAL INFLATABLE RESTRAINTS,	03/01/90	38	00	8
16021.01	BATTERIES, CHARGING AND CRANKING SYSTEMS	02/22/90	38	00	16
16009.12	GEO PRIZM 4A-FE ENGINE, FUEL, IGNITION & EMIS	08/23/89	38	00	8
16009.13	GEO-TRACKER AND METRO TBI EMISSIONS CONTROL S	08/22/89	38	00	8
16018.10	TECH 1 FAMILIARIZATION	07/31/89	38	00	8
10488.01	C K TRUCK ELECTRICAL/ELECTRONICS PROGRAM	07/25/89	38	00	8
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	02/28/89	38	00	8
18001.05	ADVANCED SPECIALIZED ELECTRONICS TRAINING	08/24/88	38	00	16
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	07/27/88	38	00	16
16003.01	ENGINE PERFORMANCE TESTING	07/25/88	38	00	16
16009.10	FUEL INJECTION EFI/PFI	06/27/88	38	00	40
16009.11	FUEL INJECTION DRIVEABILITY	02/19/88	01	00	8
16003.01	ENGINE PERFORMANCE TESTING	02/17/88	01	00	16
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	02/16/88	01	00	8
16016.06	COMPUTER COMMAND CONTROL - ADVANCED	12/21/87	38	00	8
10699.99	GM AUTOMOTIVE TECHNICAL SUMMER WORKSHOP	11/02/87	01	00	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	06/26/87	01	A	2
16009.10	FUEL INJECTION EFI/PFI	01/19/87	09	00	24
16009.08	ELECTRONIC FUEL INJECTION - ADVANCED	01/09/86	09	Z	8
16009.07	PORT FUEL INJECTION - ADVANCED	01/07/86	09	Z	8
16009.02	ELECTRONIC FUEL INJECTION	11/05/85	01	A	8
16016	COMPUTER COMMAND CONTROL - FUNDAMENTALS	11/04/85	01	A	8
16016.06	COMPUTER COMMAND CONTROL - ADVANCED	05/17/85	09	00	8
16016.05	COMPUTER COMMAND CONTROL - FUNDAMENTALS	01/24/85	09	00	16

TRAINING CENTER CLASSES CURRENT YTD HOURS: 32
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 176
CPT CURRENT YTD HOURS: 10
CPT PREV 3 YRS AND CURRENT HOURS: 50

*** END OF REPORT ***

VITA
CHARLES BONNING

EDUCATON: A.A.S. Degree, Printing, Ferris State University, 1976.

A.A.S. Degree, Auto Service, Ferris State University, 1976.

Bachelor of Science Degree, Technical Education, Ferris State University, 1978.

Masters Degree, Technical Education, Michigan State University, 1986.

WORK EXPERIENCE: Orion Enterprises, Lake Orion, Michigan, Auto Mechanic, 1967-70.

TEACHING EXPERIENCE: Kent Skill Center, Grand Rapids, Michigan, Auto Mechanics Instructor, 1977-78.

Baldwin High School, Automotive Instructor, 1979-80.

Ferris State University, Big Rapids, Michigan, Automotive Service Instructor, 1980 to present.

RECENT WORKSHOPS/COURSES:

Delco Electronics
IBM S/36 Computer
Delco TBI Training
TRW Electronics
EET 114 DC Circuits
18001.02 Specialized Electronics Training-Certified, 5/26/89.
INTEL DVI Technology, CIET Systems Inc. Authorology.
#11005.10 A/C System Controls, 6/27/89
#16009.02 EFI, 4/9/86
#16016.05 Computer Command Control, 4/8/86
#18001.02 GMSET, 5/26/89
#18001.90 Specialized Electronics, 5/17/89
#18001.91 Specialized Electronics, 5/19/89
#18001.92 Specialized Electronics, 5/23/89
#18001.93 Specialized Electronics, 5/25/89
#16009.11 Engine Performance, 1990.
#16003.01 Driveability Diagnosis, 1990.
EET-114 DC Circuits, 1990.
EET-125 AC Circuits, 1990.
EET-135 Digital Logic, 1990.
#19006.00 Cruise Control, 12/17/91.
#16018.10 Tech I Familiarization, 9/91.
#16790.11 Driveability, 1/31/91.
#16790.12 Driveability, 1/31/91.
#15005.08 Bosch ABS, 1/24/91.

College of Technology • 708 Campus Drive • Big Rapids, Michigan 49307-2281 • (616) 592-5981

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:57 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
W. C. BONNING
SELECT: F 375-54-9805
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/97			
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	06/30/97			
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	06/30/97			
ASEAUT04	AUTO: SUSPENSION & STEERING	06/30/97			
ASEAUT05	AUTO: BRAKES	06/30/97			
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/97			
ASEAUT08	AUTO: ENGINE PERFORMANCE	06/30/97			
16018.15	TECH 2 FAMILIARIZATION	08/16/96	01	M	8
11005.25	HVAC SYSTEM DIAGNOSIS	11/28/95	38	00	24
16030.02	ON BOARD DIAGNOSTICS GENERATION II	09/20/95	38	C	24
16015.20	6.5L DIESEL EFI/MECHANICAL	04/12/95	38	00	24
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/16/95	99	00	2
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/08/95	99	00	4
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
11005.18	DUAL ZONE A/C CONTROLS	02/23/95	38	C	8
16004.10	VEHICLE EMISSIONS, ENHANCED TESTING, AND DIAG	01/09/95	38	00	16
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	05/18/94	99	00	4
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	05/10/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
16014.11	4.0L/4.6L ENGINE MECHANICAL	02/09/94	01	00	16
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
56488.01	1988 QUAD 4 ENGINE MECHANICAL AND ELECTRONIC	11/23/93	99	00	4
56488.00	HIGH OUTPUT QUAD 4 ENGINE - MECHANICAL	11/18/93	99	00	2
56091	ZR1 LT5 ENGINE MECHNICAL	11/01/93	99	00	2
56490.00	3.4 LITER TWIN DUAL CAM ENGINE MECHANICAL	11/01/93	99	00	2
56014.05	4.1 /4.5 /4.9 LITER ENGINE MECHANICAL	10/30/93	99	00	2
56091.01	4.3 LITER ENGINE MECHANICAL (CPI)	10/12/93	99	00	2
16015.12	6.5L TURBOCHARGED DIESEL ENGINE	10/05/93	38	00	16
51205.01	BUICK "DUAL ZONE" CLIMATE CONTROLS	09/27/93	99	00	2
51010.00	R-134A AIR CONDITIONING REFRIGERANT	02/23/93	99	00	2
11004.00	INTRODUCTION TO A/C	10/13/92	38	C	16
10392.00	1992 MODEL NEW FEATURES	10/11/91	38	00	8
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	02/27/91	01	00	8
22008.15	BUICK, OLDS AND CADILLAC SUPPLEMENTAL INFLATA	02/25/91	01	00	8
18001.00	ELECTRICAL THEORY & BASIC CIRCUITRY	02/05/91	38	00	8
16790.11	DRIVEABILITY SEMINAR - 2.8/3.1/3.4 V6 ENGINES	01/31/91	01	00	4
16790.12	DRIVEABILITY SEMINAR - 3.0/3.8/3300/3800	01/31/91	01	00	4
15005.08	BOSCH 2U & 2S ABS	01/24/91	38	00	8
16018.10	TECH 1 FAMILIARIZATION	01/09/91	01	00	8
19006.00	CRUISE CONTROL	12/17/90	38	00	8
16003.01	ENGINE PERFORMANCE TESTING	06/21/90	01	00	16
16009.11	FUEL INJECTION DRIVEABILITY	06/20/90	01	00	8
11005.10	A/C CONTROLS - C60, C65, C67 AND C68 NON-BCM	06/27/89	01	00	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	05/26/89	38	Z	2
16009.02	ELECTRONIC FUEL INJECTION	04/09/86	01	A	8
16016.05	COMPUTER COMMAND CONTROL - FUNDAMENTALS	04/08/86	01	A	8

W. C. BONNING

SELECT: F 375-54-9805

FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC LOC HRS

TRAINING CENTER CLASSES CURRENT YTD HOURS: 8
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 152
CPT CURRENT YTD HOURS: 0
CPT PREV 3 YRS AND CURRENT HOURS: 42

*** END OF REPORT ***

VITA for

John R. Gahrs
708 Novak Lane
Big Rapids, MI 49307-2534
(616) 796-9466

I. Personal information:

Born: January 8, 1934

Current position: Professor, Automotive and Heavy Equipment Department, Ferris State University.

II. Education:

A. Formal:

Graduated from Mackenzie High School, Detroit, MI. June, 1951

Associate in Science Degree in Automotive Technology, Henry Ford Community College, Dearborn, MI. June, 1964. Graduated with High Honors

Bachelor of Science Degree in Trade-Technical Education, Ferris State University, June 1973. Graduated with Highest Distinction.

Have earned thirty-nine quarter hours of credit (of 45 required toward Master in Science degree in Educational Curriculum and Development from Michigan State University.

B. Technical updating:

Since 1984, I have completed more than 500 hours of corporate training programs in automotive technical subjects related to my primary teaching assignments.

III. Professional and work experience:

November, 1965 to present: Ferris State Univerity:

1. Program areas

a. Automotive Service Technology

b. Automotive and Heavy Equipmenmt Management

c. Heavy Equipment Technology

d. Trade-Technical Education

2. Courses taught

AUTO 113, Basic Electricty/Electronics

AUTO 116, Engine Electrical Systems

AUTO 117, Electronic Fuel Management

AUTO 213, Chassis Electrical/Electronic Systems

A-T 217, Vehicle Electronic Systems (now part of AUTO 213)

AHT 304, Materials of Industry (now part of AHEM 450)

AHT 403, Fuels and Lubricants (now part of AHEM 450)

AHEM 450, Automotive Materials

HES 103, Electrical and Fuel Systems

HEQT 110, Heavy Equipment Electronics Fundamentals

EDU 328, Utilizing Media for Instruction

D- 261, Diesel Engines

3. New course development:

AHT- 403, Fuels and Lubricants

A-T 117, Vehicle Electronic Systems

November, 1964 to November, 1965: American Motors Corporation Research Laboratories, Detroit, MI. Special Projects Technician. Responsibilities included installing, testing, adjusting, servicing, and evaluating automotive emission control devices; also responsible for collecting, analyzing, and reporting test data.

July, 1963, to November, 1964: General Motors Corporation Research Laboratories, Warren, MI. Project Mechanic assigned to Milford Proving Ground. Responsible for test track and dynamomter testing and evaluation of fuels, lubricants, and emission control devices. Duties included mechanical work, test driving, test evaluations,and data analysis and reporting.

February, 1953 to February, 1954, and February, 1957 to June, 1963: Ethyl Corporation Research Laboratories, Ferndale, MI: Engineering Technician. Responsibilities included dynamometer operation, special project testing and data collection and analysis, and component parts inspection and evaluation.

February, 1954 to February, 1957: U.S. Army. Trained sixteen weeks as a field radio repair specialist; seved two years in Alaska, first as a radio repairman, and later as communications chief for a tank company; six months in U.S. as communications chief.

IV. Related activities:

Taught approximately seventy on- and off-campus classes and workshops for automotive technicians and teachers in the areas of ignition systems, emission controls, electricity/electronics, and electronic fuel management systems.

Served as a consultant in evaluating automotive training materials and facilities in New Orleans, LA. and Detroit, MI.

V. Other relevant information:

A. Professional memberships:

Society of Automotive Engineers (SAE); member since 1974; Section chair, 1982-83; also have been general vice-chair, area vice-chair, and vice-chair for student activities.

Service Technicians Society (STS); charter member; member of organizing committee 1995-96; member of Board of Governors 1996-98.

Iota Lambda Sigma Vocational Education Fraternity; president of FSU chaper 1970-72.

B. Publications:

Eight articles on automotive related topics for Car-Care supplements to Big Rapids Pioneer

"Finding the Feedstock- Recruiting and Retaining Automotive Service Technicians", published in the 1992 SAE Transactions

C. Committee assignments:

Big Rapids Public Schools Curriculum Advisory Council, 1980-82.

Newaygo County Area Vocational Center Automotive Service Advisory Committee, 1988 to present.

Co-chair, North Central Accreditation Committee on community sources, 1985-86.

Financial Aid Advisory Committee, 1984-86.

Faculty Research Committee, 1982-84.

North Central Accredition self-study committee, 1976.

College of Technology committee on promotion policy, and search committees for dean, department head, and several faculty positions.

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:58 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
J. R. GAHRS
SELECT: F 369-32-2847
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COU NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUTL1	AUTO: ADVANCED ENGINE PERFORMANCE SPECIALIST	06/30/99			
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/99			
ASEAUT08	AUTO: ENGINE PERFORMANCE	06/30/99			
16018.15	TECH 2 FAMILIARIZATION	08/16/96	01	M	8
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	04/22/96	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	04/22/96	99	IV	2
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	04/22/96	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	04/22/96	99	IV	2
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
16030.01	ON BOARD DIAGNOSTICS GENERATION II - (UPDATE	11/15/95	38	00	8
56015.12	OBD II HISTORY AND 1995 PONTIAC FEATURES	11/14/95	99	00	2
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/14/95	99	00	2
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/06/95	99	00	4
16004.10	VEHICLE EMISSIONS, ENHANCED TESTING, AND DIAG	01/09/95	38	00	16
56500.01	3100 SFI - BUICK ONLY	12/20/94	99	00	2
56500.00	3100 SFI OLDSMOBILE VERSION	11/08/94	99	00	2
56025.00	3.4L SFI (66U ECM)	11/05/94	99	00	2
56488.03	HIGH OUTPUT QUAD 4 ENGINE - ELECTRONIC CONTRO	08/26/94	99	00	2
56010.00	SERVICE PROGRAMMING SYSTEM	08/25/94	99	00	2
16030.00	ON-BOARD DIAGNOSTICS GENERATION TWO FOR 1995	08/01/94	01	M	16
16018.10	TECH 1 FAMILIARIZATION	06/23/94	38	00	8
16009.10	FUEL INJECTION EFI/PFI	06/09/94	38	00	32
16009.18	LT1/L99 FUEL & EMISSIONS	06/03/94	01	00	8
50394	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	05/10/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	02/03/94	99	00	4
59407.01	PASSKEY 2 SELF DIAGNOSTICS	01/31/94	99	00	2
18001.09	CADILLAC FLEETWOOD ELECTRONICS	11/18/93	38	00	16
50394.10	NEW MODEL FEATURES FOR S/T PICK-UP TRUCK	09/23/93	99	00	4
59407.00	PERSONAL AUTOMOTIVE SECURITY SYSTEM (P.A.S.S.	08/04/93	99	00	2
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
10392.00	1992 MODEL NEW FEATURES	10/04/91	01	00	8
66009.19	4.3L CENTRAL PORT FUEL INJECTION	10/03/91	01	00	8
16791.23	DRIVEABILITY SEMINAR - 4-CYLINDER FUEL INJECT	10/02/91	01	00	4
16791.24	DRIVEABILITY SEMINAR - FUELS & DRIVEABILITY	10/02/91	01	00	4
16790.12	DRIVEABILITY SEMINAR - 3.0/3.8/3300/3800	10/01/91	01	00	4
16791.21	DRIVEABILITY SEMINAR - 2.8L/3.1L/3.4L V6 ENGI	10/01/91	01	00	4
22008.20	DRIVER/PASSENGER SUPPLEMENTAL INFLATABLE REST	09/30/91	01	00	8
10391.01	1991 MODEL NEW FEATURES	10/19/90	38	00	8
16003.01	ENGINE PERFORMANCE TESTING	06/21/90	01	00	16
16009.11	FUEL INJECTION DRIVEABILITY	06/20/90	01	00	8
19007.02	WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
16009.11	FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
19010.05	CORVETTE INSTRUMENTATION	04/11/90	38	00	8
19006.00	CRUISE CONTROL	03/23/90	38	00	8
22008.14	PONTIAC SUPPLEMENTAL INFLATABLE RESTRAINT, GE	10/20/89	01	00	8
22008.15	BUICK, OLDS AND CADILLAC SUPPLEMENTAL INFLATA	10/20/89	01	00	8
22008.12	CHEVROLET SUPPLEMENTAL INFLATABLE RESTRAINTS,	10/19/89	01	00	8
19006.00	CRUISE CONTROL	08/16/89	38	00	8
18001.05	ADVANCED SPECIALIZED ELECTRONICS TRAINING	07/12/89	38	Z	16

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:58 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 2
J. R. GAHRS
SELECT: F 369-32-2847
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COL NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
11005.10	A/C CONTROLS - C60, C65, C67 AND C68 NON-BCM	06/27/89	01	00	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	05/26/89	38	Z	2
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	08/03/88	38	00	16
16003.01	ENGINE PERFORMANCE TESTING	08/01/88	38	00	16
16009.02	ELECTRONIC FUEL INJECTION	11/01/85	01	A	8
16016.05	COMPUTER COMMAND CONTROL - FUNDAMENTALS	10/31/85	01	A	8
16009.00	ELECTRONIC FUEL INJECTION	07/21/82	01	A	16

TRAINING CENTER CLASSES CURRENT YTD HOURS: 8
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 136
CPT CURRENT YTD HOURS: 8
CPT PREV 3 YRS AND CURRENT HOURS: 52

*** END OF REPORT ***

FERRIS STATE UNIVERSITY

VITA
MICHAEL HACHMAN

EDUCATION Masters Degree, Michigan State University, 1986
Bachelor of Science, Trade-Technical Education, Ferris State University, 1971.
A.A.S. Degree, Automotive Service, Ferris State University, 1969.
Certificate, Automotive Machine, Ferris State University, 1967.

WORK EXPERIENCE Mechanic, Bollingers, Inc., Lakeview, Michigan 1970-72.
Service Manager, Bollingers, Inc., Lakeview, Michigan, 1970-72.

TEACHING EXPERIENCE Ferris State University, Big Rapids, Michigan, 1972 to present.
Chrysler Apprentice Program Coordinator, Ferris State University, July, 1996 to present.

1. Engines
2. Automotive Machine Shop
3. Engine Electrical
4. Shop Practice
5. Materials of Industry
6. Electrical and Fuels
7. Service Management
8. Brakes and Suspensions
9. Manual Transmissions
10. CAP Coordinator

Industrial Courses:
AC Delco EFI, March, 1985
ASIA, March 1986
GM Tech Center, April, 1986
TRW, February 1987
Rockwell International, October 1987
Caterpillar, November, 1987
Allen Test Equipment, January 27, 1988
Fuel Injection and Driveability, GMC, May 16, 1990
13002.01 GM Drivelilne Vibration Diagnosis, June 18, 1990
GM Alternative Fuels, November 18, 1991
51010.00 GM R134A Air Conditioning Refrigerant, Feb. 17, 1993
Chrysler ABS-4 Anti-lock Brakes, December 15, 1994
Chrysler DRB III/OBD II, December 16, 1994
Chrysler DRB III Update, April 2, 1996
Chrysler - 97 Wrangler, April 1, 1996
Chrysler OBD II Update, April 19-20, 1996
Chrysler Updating, June 10-14, 1996

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

M. HACHMAN

To have received training conducted by
General Motors Corporation

COURSE NUMBER		COURSE DATE
16018.15	TECH 2 FAMILIARIZATION	08-16-96
16030.02	ON BOARD DIAGNOSTICS GENERATION II	08-13-96
50396.11	OLDSMOBILE NEW MODEL FEATURES PULSAT TELECAST	02-09-96
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	02-07-96
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02-07-96
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT TELECA	02-01-96
56490.00	3.4 LITER TWIN DUAL CAM ENGINE MECHANICAL	02-23-94
16014.11	4.0L/4.6L ENGINE MECHANICAL	02-09-94
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02-07-94

This Certificate is awarded by the authority of the Service Technology Group of General Motors Corporation on
SEPTEMBER 13, 1996

STG

John Mack

Director
Training Center Operations

FORM # GMPST-146 08-12-85 PRINTED IN U.S.A.

GREG KEY
1302 Darwin St.
Big Rapids, MI 49307
Phone: 616-7967873
E Mail gkey@netonecom.net
E Mail keyg@cot01.ferris.edu

EDUCATION:

Master of Science, Eastern Michigan University, Industrial Technology Manufacturing, 1986.

Bachelor of Science, Western Michigan University, Kalamazoo, Michigan, Industrial Education, 1978.
Major: Power Automotive
Minor: General Industrial Education

EXPERIENCE:

COORDINATOR- Automotive Service and Auto Body programs Ferris State University, Big Rapids, MI. 1996.

PROFESSOR -Automotive and Heavy Equipment Department, Ferris State University, Big Rapids, MI. March 15, 1994. I am currently employed to teach courses in the Auto Service Area.

ASSOCIATE PROFESSOR - Automotive and Heavy Equipment Department, Ferris State University, Big Rapids, MI, from 1987 to 1994.

CHRYSLER TECHNICAL INSTRUCTOR - Chrysler motor Division, Chrysler Corporation, Warren MI. 1986. I was hired to teach the Allen-Bradley programmable controller to engineers and skilled trades personal in all the Manufacturing plants in the Corporation. With in six months I was Promoted to Manufacturing Supervisor at the Warren Truck plant on eight mile Road in 1986. At the truck plant I was responsible for one area of the plant and all the programmable controllers in the whole plant.

FIELD TECHNICAL INSTRUCTOR - Allen-Bradley Electronic Corporation Milwaukee Wisconsin. I work out of the Detroit Sales office as a Field Technical Instructor. I offered courses to any corporation that had Allen-Bradley Programmable controllers in there plants and that requested training. My major areas were the PLC-3 and PLC-2/30 during 1984-1986.

COLLEGE ELECTRONIC INSTRUCTOR - Baker Junior College Flint, Michigan. 1983-1984. I taught most of the electronic courses in the program and I was the only person able to teach the Programmable Controller course. Further more I taught Calculus and some computer courses.

COLLEGE AUTOMOTIVE INSTRUCTOR/COORDINATOR Carl Sandburg College, Galesburg, Illinois, 1980 1983. Was responsible for all automotive courses and all part time faculty and their schedule. I was tenure after my third year at Carl Sandburg College.

COLLEGE AUTOMOTIVE INSTRUCTOR - Mott Community College Flint, Michigan. I moved to Flint to teach at Mott Community College in the automotive department. The position was a one year temporary position from 1979-1980. I took the position hoping that it would turn into a permanent position and to receive college teaching experience.

HIGH SCHOOL VOCATIONAL ELECTRONICS - East High School, Aurora, Illinois 1978-1979. I taught three different levels of electronics at the high school. One was a industrial arts survey course and the other two were vocational electronics. Furthermore, I was responsible for all of the Audio equipment used during seminars and sports.

MAJOR SUBJECT SEMESTER HOURS:

Electronics	40 semester hours
Industrial Technology	37 semester hours
Automotive	30 semester hours
Education	27 semester hours
Mathematics	27 semester hours
Computer Science	18 semester hours

PUBLICATIONS: "Insider" Ferris Faculty and Staff Journal May 1996.

"Senate Forum" Ferris State University 1993.

PRESENTATIONS: Academic Honors Convocation, Director of Ceremonies March 19, 1995.

"Back to the Future" Technology and Industry Conference March 1992.

"Technical Education -Getting the Job Done" American Technical Education Association (ATEA) Great Lakes Regional Conference November 1990.

PROFESSIONAL ORGANIZATIONS

National Education Association (Member)
Michigan Education Association (Member)
Ferris Faculty Association (Member)
National Association of College Automotive Teachers (Member)
Michigan Industrial Education Society (Member)
Society of Automotive Engineers (Member)

UNIVERSITY / COLLEGE COMMITTEES:

Elected Vice President of the Academic Senate
Ferris State University, 1996-1997

Chair Automotive Service Program Review Committee
College of Technology
Ferris State University, 1996-1997

Chair of the Senate Governance Committee
Ferris State University, 1996-1997

North Central Self-Study Committee
Ferris State University, 1996-1997

Library Construction Committee
Ferris State University, 1996-1997

Elected Vice President of the Academic Senate
Ferris State University, 1995-1996

Chair of the Senate Governance Committee
Ferris State University, 1995-1996

Represented the Senate on the University Assessment Committee
Ferris State University, 1994-1995

Academic Senate Conference Committee to the Administration's plan for Fiscal Restructuring.
Ferris State University, 1994-1995

CO Chair Faculty Advisory Committee
to the Dean of the College of Technology
Ferris State University, 1995

Elected Vice President of the Academic Senate
Ferris State University, 1994-1995

Chair of the Senate Appointments Committee
Ferris State University, 1994-1996

CO Chair Search Committee for Dean
College of Technology
Ferris State University, 1994-1995.

Senate Election Committee
Ferris State University, 1994

Senate Conference Committee For Television Production Program
Ferris State University, 1994

Search Committee for Dean
College of Technology
Ferris State University, 1993

Elected to Senate Executive Committee as Information Officer
Ferris State University, 1992-1993.

Automotive Machine Program Review Panel (member)
College of Technology
Ferris State University, 1993

Senate Election Committee
Ferris State University, 1992

Elected to the Academic Senate
Ferris State University, 1991, 1993, 1995,1996

Curriculum Committee
College of Technology
Ferris State University, 1989-1991

Program Curriculum Committee
College of Technology
Ferris State University, 1988-Present

Automotive Service Advisor committee
College of Technology
Ferris State University, 1987-Present

ASEP Advisor Committee member
College of Technology
Ferris State University, 1990-Present

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 09:59 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1

G. W. KEY

SELECT: F 366-58-3303

FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COUR.. NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/98			
ASEAUT04	AUTO: SUSPENSION & STEERING	06/30/98			
ASEAUT05	AUTO: BRAKES	06/30/00			
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/98			
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	06/30/00			
ASEAUT08	AUTO: ENGINE PERFORMANCE	06/30/98			
16030.02	ON BOARD DIAGNOSTICS GENERATION II	08/13/96	01	M	24
16018.15	TECH 2 FAMILIARIZATION	06/14/96	38	00	8
59407.02	CHEVROLET SECURITY SYSTEMS	03/23/96	99	00	2
59407.00	PERSONAL AUTOMOTIVE SECURITY SYSTEM (P.A.S.S.	03/20/96	99	00	2
52008.17	GEO PRIZM SUPPLEMENTAL RESTRAINT SYSTEM	02/14/96	99	00	2
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	02/07/96	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	02/07/96	99	IV	2
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02/07/96	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	02/07/96	99	IV	2
19007.03	GM AUDIO SYSTEMS	02/01/96	01	00	16
22008.22	GM AIR BAG SYSTEMS	01/25/96	38	C	16
16009.18	LT1/L99 FUEL & EMISSIONS	12/22/95	01	00	8
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
53404.00	SPEED DEPENDENT DAMPING	05/23/95	99	00	2
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/15/95	99	00	2
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/08/95	99	00	4
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/07/95	99	00	4
53092.^^	ADJUSTABLE STEERING COLUMN SERVICE & DIAGNOSI	12/19/94	99	00	2
53404 (INC)	SPEED DEPENDENT DAMPING	11/01/94	99	00	2
18001.02	SPECIALIZED ELECTRONICS TRAINING	06/07/94	38	00	64
13003.03	CADILLAC CHASSIS ELECTRONIC SYSTEMS	06/02/94	01	00	16
50394.21	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/23/94	99	00	4
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	05/18/94	99	00	4
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	05/10/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
18001.09	CADILLAC FLEETWOOD ELECTRONICS	11/18/93	38	00	16
16003.01	ENGINE PERFORMANCE TESTING	10/22/92	02	A	16
00220.00	ASEP RESOURCE DEVELOPMENT	10/19/92	02	A	16
16018.01	TECHLINE DIAGNOSTIC & INFORMATION TERMINALS	07/09/92	38	00	8
16009.10	FUEL INJECTION EFI/PFI	03/12/91	38	00	16
16009.10	FUEL INJECTION EFI/PFI	02/26/91	38	00	16
19006.00	CRUISE CONTROL	12/17/90	38	00	8
16009.17	3.4L FUEL AND EMISSIONS	12/07/90	01	00	8
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	12/05/90	01	00	16
13003.00	SUSPENSION, ALIGNMENT AND WHEEL BALANCE	10/25/90	01	00	16
10391.01	1991 MODEL NEW FEATURES	10/19/90	38	00	8
22008.15	BUICK, OLDS AND CADILLAC SUPPLEMENTAL INFLATA	10/12/90	01	00	8
15005.07	TEVES II ABS	06/19/90	01	00	8
13002.01	VIBRATION DIAGNOSIS AND REPAIR	06/18/90	01	00	8
19007.02	WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
11004.01	AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8
16009.11	FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
15005.04	DELCO MORAINE III ANTILOCK BRAKE SYSTEM - 198	04/20/90	38	00	8
22008 (INC)	CHEVROLET SUPPLEMENTAL INFLATABLE RESTRAINTS,	03/01/90	38	00	4

G. W. KEY

SELECT: F 366-58-3303

FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
16021.01	BATTERIES, CHARGING AND CRANKING SYSTEMS	02/22/90	38	00	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	05/26/89	38	Z	2
16003.01	ENGINE PERFORMANCE TESTING	03/16/89	38	00	16
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	02/28/89	38	00	8
56488.01	1988 QUAD 4 ENGINE MECHANICAL AND ELECTRONIC	11/21/88	99	00	4
16018.10	TECH 1 FAMILIARIZATION	10/22/88	02	00	8
15005.04	DELCO MORAINE III ANTILOCK BRAKE SYSTEM - 198	10/19/88	02	00	8
16016.13	NOVA, SPECTRUM, SPRINT CARBURETION & EMISSION	10/18/88	02	00	16
16009.13	GEO-TRACKER AND METRO TBI EMISSIONS CONTROL S	10/17/88	02	00	8
16009.10	FUEL INJECTION EFI/PFI	06/27/88	38	00	40
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	06/03/88	01	00	8
18001.05	ADVANCED SPECIALIZED ELECTRONICS TRAINING	06/01/88	01	00	16

TRAINING CENTER CLASSES CURRENT YTD HOURS: 64
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 208
CPT CURRENT YTD HOURS: 14
CPT PREV 3 YRS AND CURRENT HOURS: 48

*** END OF REPORT ***

VITA

RONALD L. NEIDERHEIDE

EDUCATION:

Associate Degree, Automotive Service, Ferris State University, Big Rapids, Michigan, 1967.

Bachelor of Science Degree, Teacher Education, Ferris State University, Big Rapids, Michigan, 1970.

WORK EXPERIENCE:

Mechanic, Buick Dealership, Grand Rapids, Michigan, 1967-68.

Mechanic at an independent garage, 1971-74.

TEACHING EXPERIENCE:

Automotive Service Instructor, Ferris State University, 1974 to present.

Areas of Concentration:

1. Gasoline engines
2. Drivelines
3. Automatic transmissions
4. Automotive electrical
5. Brakes
6. Alignment
7. Air Conditioning

Recent Industrial Courses/Workshops:

ASE Certified, Engine Repair, expires 7/1/98.
ASE Certified, Manual Drive Train and Axles, expires 7/1/98.
#56014.05, GM 1/5/93.
#56091.01, GM 12/3/92.
#13002.02, GM Vibration Correction, 11/21/91.

Ford EEC IV School
Ford Automatic Transaxles
Allen Equipment Workshop on electronic engine controls.

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 10:00 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1

R. L. NEIDERHEIDE

SELECT: F 370-46-9624

FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/98			
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	06/30/98			
16014.11	4.0L/4.6L ENGINE MECHANICAL	05/11/95	01	00	16
16015.20	6.5L DIESEL EFI/MECHANICAL	04/12/95	38	00	24
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/15/95	99	00	2
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/06/95	99	00	4
17002.04	4T60/4T60E 4-SPEED AUTOMATIC TRANSAXLE	08/01/94	01	M	32
56014.05	4.1 /4.5 /4.9 LITER ENGINE MECHANICAL	01/05/93	99	00	2
56091.01	4.3 LITER ENGINE MECHANICAL (CPI)	12/03/92	99	00	2
13002.02	VIBRATION CORRECTION	11/21/91	01	M	16

TRAINING CENTER CLASSES CURRENT YTD HOURS: 0
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 72
CPT CURRENT YTD HOURS: 0
CPT PREV 3 YRS AND CURRENT HOURS: 10

*** END OF REPORT ***

FERRIS STATE UNIVERSITY

VITA
JIMMIE L. NORRINGTON

EDUCATION:

Bachelor of Science in Trade-Technical Education, Ferris State University, 1973.
Associate Degree, Automotive Service Technology, Ferris State University, 1968.
Certificate, Automotive Machine, Ferris State University, 1967.

15 semester hours, Central Michigan University and six quarter hours, Michigan State University Masters Program. Industrial Electronics Technology courses Ferris State University: EET 114 DC Circuits, EET 125 AC Circuits, EET 135 Digital Logic, EET 126 Basic Electronics, and EET 216 Semiconductor Electronics.

WORK EXPERIENCE:

Two years Automotive Technician, Triangle Auto Sales, Big Rapids, Michigan.
One year Service Manager, Triangle Auto Sales, Big Rapids, Michigan.

TEACHING EXPERIENCE:

Ferris State University, 1971 to present. Areas of concentration:

1. AUTO 200 and 250 Auto Service Floor (lead instructor).
2. AUTO 111 Power Transmissions.
3. AUTO 116 Engine Electrical.
4. AUTO 211 Automatic Transmissions
5. AUTO 117 Fuel and Emissions
6. A-T 272 Service Management
7. A-T 105 Maintenance Fundamentals
8. GM ASEP Coordinator
9. AUTO 214 Automotive Heating and Air Conditioning
10. AUTO 113 Basic Electricity/Electronics

COMMITTEE PARTICIPATION:

R.F.A.C. Committee ending 1986.
R.F.A.C. Committee on committee assignments.
Academic Senate through 1987.
Physical Facilities Study Committee (North Central Accreditation).
Auto Service Program Curriculum Committee through 1995.
Faculty Search Committee for three automotive instructors and program director.
Recruiting Committee.
Technician of the Future Day Planning Committee.
Automotive Committee member and judge for the Michigan State VICA Skill Olympics.

ASE certified technical.

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 10:04 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
J. L. NORRINGTON
SELECT: F 380-50-9851
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/98			
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/98			
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	06/30/98			
ASEAUT08	AUTO: ENGINE PERFORMANCE	06/30/98			
16018.15	TECH 2 FAMILIARIZATION	08/16/96	01	M	8
16030.02	ON BOARD DIAGNOSTICS GENERATION II	08/13/96	01	M	24
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02/12/96	99	IV	2
16009.18	LT1/L99 FUEL & EMISSIONS	12/22/95	01	00	8
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	11/14/95	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	11/14/95	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	11/09/95	99	IV	2
51205.01	BUICK "DUAL ZONE" CLIMATE CONTROLS	11/08/95	99	00	2
51010.00	R-134A AIR CONDITIONING REFRIGERANT	11/07/95	99	00	2
51010.15	134A RETROFIT FOR GM CARS AND TRUCKS	11/07/95	99	00	2
11004.00	INTRODUCTION TO A/C	07/17/95	38	00	16
11005.25	HVAC SYSTEM DIAGNOSIS	06/07/95	38	00	24
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/16/95	99	00	2
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/06/95	99	00	4
16004.10	VEHICLE EMISSIONS, ENHANCED TESTING, AND DIAG	02/02/95	38	00	16
16030.00	ON-BOARD DIAGNOSTICS GENERATION TWO FOR 1995	08/01/94	01	M	16
56015.10	ON-BOARD DIAGNOSTICS GEN II HISTORY & 1995 FE	07/27/94	99	00	2
18001.03	SPECIALIZED ELECTRONICS TRAINING	06/07/94	38	00	64
5039[illegible]	CONFIDENCE 94 NEW MODEL FEATURES FOR GMC TRUC	05/24/94	99	00	4
16014.11	4.0L/4.6L ENGINE MECHANICAL	02/09/94	01	00	16
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	02/03/94	99	00	4
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	02/03/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	12/16/93	99	00	4
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	12/15/93	99	00	4
50394.24	CONFIDENCE 94 NEW MODEL FEATURES FOR OLDSMOBI	12/15/93	99	00	4
50394.21	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	12/14/93	99	00	4
56500.00	3100 SFI OLDSMOBILE VERSION	09/24/93	99	00	2
56488.03	HIGH OUTPUT QUAD 4 ENGINE - ELECTRONIC CONTRO	09/22/93	99	00	2
50394.10	NEW MODEL FEATURES FOR S/T PICK-UP TRUCK	08/25/93	99	00	4
16009.10	FUEL INJECTION EFI/PFI	06/15/93	38	00	24
16009.17	3.4L FUEL AND EMISSIONS	04/30/93	01	M	8
56025.00	3.4L SFI (66U ECM)	03/10/93	99	00	2
56010.00	SERVICE PROGRAMMING SYSTEM	03/08/93	99	00	2
16009.18	LT1/L99 FUEL & EMISSIONS	02/24/93	38	00	8
51010.00	R-134A AIR CONDITIONING REFRIGERANT	02/17/93	99	00	2
16022.01	4.6L "NORTHSTAR" POWERTRAIN CONTROLS	01/26/93	38	00	16
16006.00	FUNDAMENTALS OF CLOSED LOOP FUEL INJECTION	01/11/93	38	00	16
16009.19	4.3L CENTRAL PORT FUEL INJECTION	05/08/92	38	N	8
13002.02	VIBRATION CORRECTION	11/21/91	01	M	16
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
16018.01	TECHLINE DIAGNOSTIC & INFORMATION TERMINALS	04/25/91	38	00	8
16009.10	FUEL INJECTION EFI/PFI	03/12/91	38	00	16
16009.10	FUEL INJECTION EFI/PFI	02/26/91	38	00	16
22008.15	BUICK, OLDS AND CADILLAC SUPPLEMENTAL INFLATA	02/25/91	01	00	8
16790	DRIVEABILITY SEMINAR - 2.8/3.1/3.4 V6 ENGINES	01/31/91	01	00	4

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 10:04 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 2
J. L. NORRINGTON
SELECT: F 380-50-9851
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
16790.12	DRIVEABILITY SEMINAR - 3.0/3.8/3300/3800	01/31/91	01	00	4
16009.17	3.4L FUEL AND EMISSIONS	01/16/91	38	00	8
19007.02	WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
11004.01	AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8
16009.11	FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
15005.05	FOUR WHEEL ANTILOCK BRAKES (4WAL)	03/02/90	38	00	8
22008.12	CHEVROLET SUPPLEMENTAL INFLATABLE RESTRAINTS,	03/01/90	38	00	8
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	02/28/89	38	00	8
16018.10	TECH 1 FAMILIARIZATION	02/27/89	38	00	8
56488.01	1988 QUAD 4 ENGINE MECHANICAL AND ELECTRONIC	11/21/88	99	00	4
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	08/03/88	38	00	16
16003.01	ENGINE PERFORMANCE TESTING	08/01/88	38	00	16
16020.05	DISTRIBUTORLESS IGNITION SYSTEMS	06/03/88	01	00	8
18001.05	ADVANCED SPECIALIZED ELECTRONICS TRAINING	06/01/88	01	00	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	10/21/86	01	Z	2
16009.02	ELECTRONIC FUEL INJECTION	04/09/86	01	A	8
16016.05	COMPUTER COMMAND CONTROL - FUNDAMENTALS	04/08/86	01	A	8

TRAINING CENTER CLASSES CURRENT YTD HOURS: 32
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 232
CPT CURRENT YTD HOURS: 2
CPT PREV 3 YRS AND CURRENT HOURS: 58

*** END OF REPORT ***

VITA
DAVID H. PAYTON

EDUCATION:

Bachelor of Science Degree, Eastern Michigan University, 1961.
Master of Science Degree, University of Michigan, 1964.
Associate Degree in Automotive Service, Ferris State University, 1965.
Leadership Development Program, University of Michigan, 1973.

WORK EXPERIENCE:

Mechanic part-time, Ken Gardner Ford, 1958-1960.

Wheel vehicle mechanic, servicing two and a half ton trucks, one-quarter ton trucks and passenger cars, U.S. Army, 1955-1958.

Light repair mechanic, Ken Gardner Ford, Port Huron, Michigan, 1953-1955.

TEACHING EXPERIENCE:

Ferris State University, Big Rapids, Michigan, 1973 to present.
Capitol Area Career Center, Mason, Michigan, 1972-1973.
Stevenson High School, 1965 to 1972.
Nankin Mills Junior High School, 1963.
Port Huron High School, 1962 to 1963.

Attended Industrial Courses/Workshops:
A.C. Delco Electronic Fuel Injection Training Program, 1985.
Auto Electronics Workshop, 1985.
Auto Electronics Workshop, 1986.
Ford EEC IV Computer Control Training Program, 1987.
GM Fuel Injection Training Program, 1987.
F.M.C. Front Suspension and Alignment School, 1987.
18001.05 Advanced Specialized Electronics Training, 6/6/89.
18001.02 Specialized Electronics Training-Certified, 5/26/89.
11005.10 A/C Controls, 4/17/89.
16018.10 Tech I, Familiarization, 7/89.
16009.11 Fuel Injection Driveability, 05/16/90.
11004.01 Air Conditioning Compressor Service, 05/17/90.
19007.02 Windshield Wiper & Washer Systems, 05/18/90.
22008.12 Chevrolet Supplemental Inflatable Restraints GENE, 3/1/90.
16003.01 Engine Performance Testing, 6/21/90.
16009.11 Fuel Injection Driveability, 6/20/90.
15005.05 Four Wheel Antilock Brakes (4Wal), 3/2/90.
18005.06 Applied Automotive Electronics, 11/19/91.
11004.00 Fundamentals of Air Conditioning, 1/13/92.
51205.01 Buick "Dual Zone" Climate Controls, 12/15/92.
51010.00 R-134A Air Conditioning Refrigerant, 12/6/92.
59407.00 Personal Automotive Security System (PASS), 1/27/93.
52208.11 Inflatable Restraint System, 2/11/93.
59407.01 Passkey II Self Diagnostics, 2/3/93.
18001.09 Cadillac Fleetwood Electronics, 11/19/93.

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 10:05 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
D. H. PAYTON
SELECT: F 393-30-2211
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COU. NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/98			
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	06/30/98			
50396.11	OLDSMOBILE NEW MODEL FEATURES PULSAT TELECAST	02/22/96	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	02/08/96	99	IV	2
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02/08/96	99	IV	2
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	02/06/96	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	02/06/96	99	IV	2
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
19007.03	GM AUDIO SYSTEMS	05/04/95	38	C	16
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/15/95	99	00	2
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/08/95	99	00	4
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
11005.18	DUAL ZONE A/C CONTROLS	02/23/95	38	C	16
52008.17	GEO PRIZM SUPPLEMENTAL RESTRAINT SYSTEM	02/21/95	99	00	2
22008.22	GM AIR BAG SYSTEMS	02/02/95	38	00	16
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	05/18/94	99	00	4
50394.22	CONFIDENCE 94 NEW MODEL FEATURES FOR GMC TRUC	05/13/94	99	00	4
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	05/10/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
18001.09	CADILLAC FLEETWOOD ELECTRONICS	11/18/93	38	00	16
52208.11	INFLATABLE RESTRAINT SYSTEM	02/11/93	99	00	2
59407.01	PASSKEY 2 SELF DIAGNOSTICS	02/03/93	99	00	2
5940	PERSONAL AUTOMOTIVE SECURITY SYSTEM (P.A.S.S.	01/27/93	99	00	2
51205.01	BUICK "DUAL ZONE" CLIMATE CONTROLS	12/15/92	99	00	2
51010.00	R-134A AIR CONDITIONING REFRIGERANT	12/06/92	99	00	2
11004.00	INTRODUCTION TO A/C	10/13/92	38	C	16
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
16003.01	ENGINE PERFORMANCE TESTING	06/21/90	01	00	16
16009.11	FUEL INJECTION DRIVEABILITY	06/20/90	01	00	8
19007.02	WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
11004.01	AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8
16009.11	FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
15005.05	FOUR WHEEL ANTILOCK BRAKES (4WAL)	03/02/90	38	00	8
22008.12	CHEVROLET SUPPLEMENTAL INFLATABLE RESTRAINTS,	03/01/90	38	00	8
19006.00	CRUISE CONTROL	08/16/89	38	00	8
16018.10	TECH 1 FAMILIARIZATION	07/31/89	38	00	8
18001.05	ADVANCED SPECIALIZED ELECTRONICS TRAINING	06/06/89	38	00	16
18001.02	SPECIALIZED ELECTRONICS TRAINING	05/26/89	38	Z	2
11005.10	A/C CONTROLS - C60, C65, C67 AND C68 NON-BCM	04/17/89	01	00	16
16009.02	ELECTRONIC FUEL INJECTION	04/09/86	01	A	8
16016.05	COMPUTER COMMAND CONTROL - FUNDAMENTALS	04/08/86	01	A	8

TRAINING CENTER CLASSES CURRENT YTD HOURS: 0
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 104
CPT CURRENT YTD HOURS: 10
CPT PREV 3 YRS AND CURRENT HOURS: 42

*** END OF REPORT ***

FERRIS STATE UNIVERSITY

VITA
WILLIAM E. ROUTLEY, PROFESSOR

EDUCATION:

Associate Degree, Ferris State University, 1968.
Bachelor of Science, Trade Technical Instructor, Ferris State University, 1970. M.A. in Educational Administration, Central Michigan University, 1980. ASE Certified, Master Technician.

WORK EXPERIENCE:

Curries Standard Service, Big Rapids, Mechanic, Wrecker Driver, 1963-67.
Franck & Wood Chevrolet, Big Rapids, Mechanic Chevrolet, 1968.
Parts/Service Writer, Chrysler Corporation, 1969.
Owner repair facility, Stanwood, Michigan, 1973 to 1991.
Worked at University Chevrolet, Big Rapids, Michigan with Engines/Transmission expert.

TEACHING EXPERIENCE:
Ferris State University Teacher Assistant, Automotive Department, 1968-69.
Vocational Automotive Instructor, Elk Rapids, Michigan; developed program and shop, 1970-71.
Vocational Automotive Instructor, Chippewa Hills; developed program and shop, 1971-74.
Ferris State University, Automotive Programs Instructor, Big Rapids, Michigan, 1974 to 1983.
Singapore Vocational Instructor, and curriculum revision specialist, 1984 and 1985.
Jakarta, Indonesia, developed and presented Maintenance Management Seminar for National business owners (24 hours training - 85 attendees) 1984.
Ferris State University Automotive Service Floor Coordinator, 1985 to 1989.
Ferris State University, Automotive Engines Instructor, 1989-1990.
Ferris State University, Ford ASSET Instructor and Coordinator, 1991-1996.
NACAT Coordinator, 1989 to present.
China - Wright Works Vocational School--developed curriculum and taught automotive electronics and repair of American automobiles.

INDUSTRIAL COURSES/WORKSHOPS:
Robert Bosch F.I., 1983.
CCC GM Training, 1985.
GM, Ford NACAT Seminar, 1985.
Chrysler Electronics, 1986.
Dana (CV) Training, 1986.
EFI GM Training, 1987.
Ford EEC IV, 1987.
TRW Generic Computer Certification, 1987.
GM, Ford, Sun NACAT Seminar, 1987.
Basic Electronics, Ferris State University, 1987.
EST and Allen Diagnostics, 1988.
PC Computer, 1988.

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

INDUSTRIAL COURSES/WORKSHOPS CONTINUED:

GM-17489.01 GEO Tracker 4x4, 2/16/89.
FMC 4-Wheel Alignment, 1989.
GM-18001.05 Adv. Specialized Electronics, 6/6/89.
GM-18001.02 Specialized Electronics Training-Certified, 5/26/89.
GM Quad 4 Engine, 5/5/1989.
GM 15005.06 Bosch ABS 2U, 10/16/89.
GM 15005.05 Four Wheel Antilock Brakes, 10/17/89.
GM-15005.08 Bosch ABS 2U and 2S Brake System, 10/18/89.
GM-15005.04 Delco Moraine Antilock Brake System, 4/20/90.
GM-13003-00 Suspension, Alilgnment and Wheel Balance, 10/25/90.
Ford Training Techniques Course, 6/14/91.
Ford Electrical Systems Course, 8/26/91.
Ford STST Steering Systems, 8/30/91.
Ford Climate Control Electronics #3603FS, 2/11-13/92.
Ford Automotive Electronics #3007F2, 2/18-21/92.
Ford Antilock Brakes #1203G3, 3/5-6/92.
ASE Refrigerant Recovery & Recycling Review and Certification Program, 3/4/92.
Ford Climate Control Systems, 6/1/92.
Ford Brake Systems Course, 7/13/92.
Ford Suspension Course, 8/10/92.
Ford Steering Course, 8/26/92.
Ford Advanced Automotive Electronics Course 12/14/92.
Ford Auto Trans Hydraulic and Mechanical Course, 1/18/94.
Ford Diesel Engine Operations Course, 1/25/94.
Ford Advanced Electronic Engine Control Course, 5/16/94.
GM-18001.11 Advanced Electronics Strategy Based Diagnostics, 12/19/95.
Certified Master Automobile Technician (ASE since 1975); (12/31/95 Recertified).
Ford Ignition, Exhaust, Emission Diagnosis and Testing, 2/12-14/96.

VITA

WILLIAM D. WAGNER

EDUCATION: Associates Degree, Ferris State University, Applied Science, 1972.

Bachelors Degree, Ferris State University, Teacher Education, 1978.

WORK EXPERIENCE: Mechanic, Staal Buick, Grand Rapids, Michigan 1972.
Mechanic, AAMCO Transmissions, Grand Rapids, Michigan, 1972.
Technician, AMC Research, Detroit, Michigan, 1973. Carburetion and Exhaust Emission Research and Development.

TEACHING EXPERIENCE: Ferris State University, Big Rapids, Michigan, 1973-76, Instructor Assistant and equipment repair.

Ferris State University, Big Rapids, Michigan, 1976 to present, Assistant Professor.

1. Automotive Engines
2. Brakes
3. Engine Electrical
4. Fuel and Emissions
5. Driveability

Recent Industrial Courses/Workshops:

Sun Electric Computer Diagnostics
Allen Electric Scope Analysis
Allen Electric Electronic Ignition
GMC-3 Workshop
Ford EEC 4 Workshop
Chrysler Electronic Ignition Workshop
18001.02 Specialized Electronics Training-Certified, 5/26/89.
16018.10 Tech I, Familiarization, 7/89.
16009.11 Fuel Injection Driveability, 5/90.
16004.01 Air Conditioning Compressor Service, 5/90.
16009.10 PDI: Fuel Injection EFI, 02/26/91
16009.10 PDI: Fuel Injection PFI 03/12/91.
10392.00 1992 Model New Features, 10/11/91.
18005.06 Applied Automotive Electronics, 11/19/91.
13002.02 Vibration Correction, 11/21/91.
16009.10 Fuel Injection EFI/PFI, 2/11/92.
16022.01 4.6L Northstar Powertrain Controls, 01/26/93.
56490.00 3.4 Liter Twin Dual Cam Engine Mechanical, 6/5/93.
56091.12 ZR1 LT5 Engine Mechanical, 6/7/93.

College of Technology • 708 Campus Drive • Big Rapids, Michigan 49307-2281 • (616) 592-5981

FERRIS STATE UNIVERSITY

VITA
RONALD A. TUURI

EDUCATION:

Bachelor of Science and Master of Science, Vocational Education, University of Wisconsin-Stout, 1977 and 1984.

TEACHING EXPERIENCE:

Ferris State University, Big Rapids, MI, 1987 to present; Automotive Service Technology faculty. Previously taught four years vocational automotive at Grafton (Wisconsin) High School; also 8-1/2 years of evening adult automotive courses.

WORK EXPERIENCE:

Varied. Over 20,600 hours total in the automotive service industry as a technician and as a dealership service department manager.

PROFESSIONAL ASSOCIATIONS:

NACAT (North American Council of Automotive Teachers) member.

1996 Charter Member in STS (Service Technicians Society); affiliate of SAE (Society of Automotive Engineers).

RECOGNITION AND HONORS:

Master Automobile Technician status by ASE, in eight certification areas.

Certified by ATRA (Automatic Transmission Rebuilders Association) in all certification areas.

Certified by the EPA (Environmental Protection Agency) through ASE certifying program, in Refrigerant Recovery and Recycling.

PUBLICATIONS:

Co-authored Automatic Transmissions and Transaxles, 4th Edition (Delmar, 1997 copyright).

Article printed in November, 1993 issue of Tech Directions, titled "Emerging Automotive Terminology & Technology".

AUTOMOTIVE & HEAVY EQUIPMENT
COLLEGE OF TECHNOLOGY
708 Campus Drive, Big Rapids, MI 49307-2281
Phone 616 592-5981 Fax 616 592-5982

RELATED ACTIVITIES/CREDENTIALS:

Consulting service: Technical Services and Assessments, Inc. Prepare intermediate school districts for NATEF/ASE certification process.

NOCTI/SOCAT automotive technician test workshop, November 1996.

Automotive Service Excellence (ASE) national certification test workshop - Automobile Manual Drive Train and Axles Certification Test, October, 1996.

Evaluation Team Leader (ETL) for the National Automotive Technician's Education Foundation (NATEF)/ASE.

Associated with Engineering Analysis Associates (EAA) and Chrysler Arbitration Board.

Certification test administrator/proctor for Automatic Transmission Rebuilders Association (ATRA).

1993 team member for "Manual Transmission and Drivetrain Curriculum" project for Ford Motor Company training programs.

Manuscript reviewer for two textbooks: Manual Drive Train and Axles (January, 1993) and Automotive Emissions Systems (March, 1994).

INDUSTRY COURSES/WORKSHOPS: (1992 to present)

General Motors: Approximate total training = 42 days.

Ford Motor Company: Total training = 17 days.

Chrysler Corporation: Total training = 4 days.

State of Michigan - Federal Emission Control IM240 (Inspection/Maintenance, 240 second emission test) training (June, 1995).

1994 Big T Transmission Industry Conference, Cincinnati, Ohio; toured Ford transmission assembly plant in Sharonville, Ohio (October, 1994).

1993 NACAT (North American Council of Automotive Teachers) annual conference, High Point, North Carolina.

ATRA (Automatic Transmission Rebuilder's Association) = Two one-day seminars (July, 1993 and November, 1992).

1993 SAE (Society of Automotive Engineers) International Congress and Exposition (March, 1993), Detroit, Michigan.

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 10:06 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
R. A. TUURI
SELECT: F 399-58-2263
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/01			
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	06/30/01			
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	06/30/01			
ASEAUT04	AUTO: SUSPENSION & STEERING	06/30/01			
ASEAUT05	AUTO: BRAKES	06/30/01			
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	06/30/01			
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	06/30/01			
ASEAUT08	AUTO: ENGINE PERFORMANCE	06/30/01			
16018.15	TECH 2 FAMILIARIZATION	08/16/96	01	M	8
57015.00	4T40-E TRANSAXLE	07/02/96	99	00	2
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	02/26/96	99	IV	2
50396.11	OLDSMOBILE NEW MODEL FEATURES PULSAT TELECAST	02/26/96	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	02/26/96	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	02/26/96	99	IV	2
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02/26/96	99	IV	2
16030.01	ON BOARD DIAGNOSTICS GENERATION II - (UPDATE	02/21/96	38	00	8
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
22008.22	GM AIR BAG SYSTEMS	11/28/95	38	C	16
51010.15	134A RETROFIT FOR GM CARS AND TRUCKS	04/26/95	99	00	2
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/16/95	99	00	2
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/08/95	99	00	4
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/06/95	99	00	4
51205.01	BUICK "DUAL ZONE" CLIMATE CONTROLS	12/10/94	99	00	2
17001 [illegible]	HYDRA-MATIC 4T80E 4-SPEED AUTOMATIC TRANSAXLE	09/07/94	38	00	24
16015	6.5L DIESEL ELECTRONIC FUEL INJECTION	08/03/94	01	M	16
30.00	ON-BOARD DIAGNOSTICS GENERATION TWO FOR 1995	08/01/94	01	M	16
56015.10	ON-BOARD DIAGNOSTICS GEN II HISTORY & 1995 FE	07/18/94	99	00	2
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	05/20/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	05/18/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	05/03/94	99	00	4
50394.22	CONFIDENCE 94 NEW MODEL FEATURES FOR GMC TRUC	03/12/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	03/11/94	99	00	4
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	03/09/94	99	00	4
50394.24	CONFIDENCE 94 NEW MODEL FEATURES FOR OLDSMOBI	03/08/94	99	00	4
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	03/07/94	99	00	4
50394.21	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	03/06/94	99	00	4
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	03/05/94	99	00	4
16014.11	4.0L/4.6L ENGINE MECHANICAL	02/09/94	01	00	16
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
59407.00	PERSONAL AUTOMOTIVE SECURITY SYSTEM (P.A.S.S.	02/06/94	99	00	2
11005.17	LIGHT DUTY TRUCK AIR CONDITIONING CONTROLS	11/11/93	38	00	8
51010.00	R-134A AIR CONDITIONING REFRIGERANT	10/25/93	99	00	2
16018.98	ADVANCED TECH 1	10/19/93	38	00	8
50394.10	NEW MODEL FEATUES FOR S/T PICK-UP TRUCK	10/02/93	99	00	4
11005.10	A/C CONTROLS - C60, C65, C67 AND C68 NON-BCM	07/14/93	38	00	16
11004.00	INTRODUCTION TO A/C	07/07/93	38	00	16
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	04/28/93	01	M	16
17001.18	HYDRA-MATIC 4L60E 4-SPEED AUTOMATIC TRANSMISS	04/27/93	01	M	8
17001.17	HYDRA-MATIC 4L80E 4-SPEED AUTOMATIC TRANSMISS	01/20/93	38	00	24
57490.01	HYDRA-MATIC 4T60E ELECTRONICALLY-SHIFTED TRAN	01/04/93	99	00	2
16018.10	TECH 1 FAMILIARIZATION	12/11/92	38	00	8
50491	OLDSMOBILE BRAVADA FEATURES	12/01/92	99	00	2

R. A. TUURI

SELECT: F 399-58-2263

FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COUR. NUMBER		COURSE NAME	COURSE DATE	TC	LOC	HRS
57490.00		HYDRA-MATIC 4T60E ELECTRONICALLY SHIFTED TRAN	12/01/92	99	00	2
57488.00		PONTIAC 6000 STE ALL WHEEL DRIVE	12/01/92	99	00	2
17003.13		NVG4500 5-SPEED MANUAL TRANSMISSION	12/11/91	38	C	8
13002.02		VIBRATION CORRECTION	11/21/91	01	M	16
18005.06		APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
17002.03		HYDRA-MATIC 4T60E 4-SPEED AUTOMATIC TRANSAXLE	02/26/91	38	00	16
19007.02		WINDSHIELD WIPER & WASHER SYSTEMS	05/18/90	38	N	8
11004.01		AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8
13002.01		VIBRATION DIAGNOSIS AND REPAIR	04/09/90	38	00	8
17001.11		4L60 (700-R4) AUTOMATIC TRANSMISSION	02/22/90	38	00	16
17002.02		GEO STORM 4 SPEED AUTOMATIC TRANSAXLE	01/23/90	38	C	16
17001.12		4T60 (440-T4) AUTOMATIC TRANSAXLE	05/30/89	01	00	24
18001.02		SPECIALIZED ELECTRONICS TRAINING	05/26/89	38	Z	2
17002.00	(INC)	125-125C (3T40) AUTOMATIC TRANSAXLE	11/21/88	01	00	16
14003.03		K-SERIES TRUCK FOUR WHEEL DRIVE	04/13/88	38	00	8
17004.04		5TM40 (HM-282) 5-SPEED MANUAL TRANSAXLE	04/12/88	38	00	8
17003.11		5LM60 (HM-290) SERIES MANUAL TRANSMISSIONS	03/03/88	38	00	16
14001.00		REAR AXLE AND PROPSHAFT	03/01/88	38	00	16

TRAINING CENTER CLASSES CURRENT YTD HOURS: 16
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 160
CPT CURRENT YTD HOURS: 12
CPT PREV 3 YRS AND CURRENT HOURS: 76

*** END OF REPORT ***

REPORT ID: SERRRR35 GENERAL MOTORS TRAINING CENTER 10:07 11/01/96
SORT - COURSE DATE TRAINING HISTORY FOR: PAGE 1
W. D. WAGNER
SELECT: F 278-50-4366
FERRIS STATE UNIVERSITY / J. NORRINGTON (A002865)

COURSE NUMBER	COURSE NAME	COURSE DATE	TC	LOC	HRS
ASEAUT01	AUTO: ENGINE REPAIR	06/30/01			
16018.15	TECH 2 FAMILIARIZATION	08/16/96	01	M	8
16030.02	ON BOARD DIAGNOSTICS GENERATION II	08/13/96	01	M	24
16015.20	6.5L DIESEL EFI/MECHANICAL	04/23/96	38	00	24
50396.11	OLDSMOBILE NEW MODEL FEATURES PULSAT TELECAST	02/22/96	99	IV	2
50396.23	GMC TRUCK NEW MODEL FEATURES PULSAT TELECAST	02/08/96	99	IV	2
50396.13	PONTIAC NEW MODEL FEATURES PULSAT TELECAST.	02/08/96	99	IV	2
50396.10	CADILLAC NEW MODEL FEATURES PULSAT TELECAST	02/06/96	99	IV	2
50396.20	CHEVROLET CAR AND TRUCK NEW FEATURES PULSAT T	02/06/96	99	IV	2
18001.11	ADVANCED ELECTRONICS STRATEGY BASED DIAGNOSTI	12/19/95	01	M	24
50395.00	1995 NEW MODEL FEATURES PULSAT TELECAST	03/07/95	99	00	4
50395.01	1995 RIVIERA NEW MODEL FEATURES - PULSAT TELE	03/07/95	99	00	4
50395.03	LUMINA / MONTE CARLO NEW MODEL FEATURES - CHE	03/06/95	99	00	2
16030.00 (INC)	ON-BOARD DIAGNOSTICS GENERATION TWO FOR 1995	02/09/95	38	C	0
17002.04	4T60/4T60E 4-SPEED AUTOMATIC TRANSAXLE	08/01/94	01	M	32
50394.25	CONFIDENCE 94 NEW MODEL FEATURES FOR BUICK CA	02/22/94	99	00	4
16014.11	4.0L/4.6L ENGINE MECHANICAL	02/09/94	01	00	16
14003.04	ALL WHEEL DRIVE/FOUR WHEEL DRIVE SYSTEMS	02/07/94	01	00	16
50394.28	CONFIDENCE 94 TELECAST FOR CADILLAC CARS	02/02/94	99	00	4
50394.22	CONFIDENCE 94 NEW MODEL FEATURES FOR GMC TRUC	01/26/94	99	00	4
50394.21	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	01/20/94	99	00	4
50394.23	CONFIDENCE 94 NEW MODEL FEATURES FOR PONTIAC	12/20/93	99	00	4
50394.20	CONFIDENCE 94 NEW MODEL FEATURES FOR CHEVROLE	12/05/93	99	00	4
56488 [illegible]	HIGH OUTPUT QUAD 4 ENGINE - MECHANICAL	11/30/93	99	00	2
56488	1988 QUAD 4 ENGINE MECHANICAL AND ELECTRONIC	11/28/93	99	00	4
56014.[illegible]	4.1 /4.5 /4.9 LITER ENGINE MECHANICAL	11/11/93	99	00	2
57490.01	HYDRA-MATIC 4T60E ELECTRONICALLY-SHIFTED TRAN	09/28/93	99	00	2
56091.12	ZR1 LT5 ENGINE MECHNICAL	06/07/93	99	00	2
56490.00	3.4 LITER TWIN DUAL CAM ENGINE MECHANICAL	06/05/93	99	00	2
16022.01	4.6L "NORTHSTAR" POWERTRAIN CONTROLS	01/26/93	38	00	16
16009.10	FUEL INJECTION EFI/PFI	02/11/92	38	00	24
13002.02	VIBRATION CORRECTION	11/21/91	01	M	16
18005.06	APPLIED AUTOMOTIVE ELECTRONICS	11/19/91	01	M	16
10392.00	1992 MODEL NEW FEATURES	10/11/91	38	00	8
16009.10	FUEL INJECTION EFI/PFI	03/12/91	38	00	16
16009.10	FUEL INJECTION EFI/PFI	02/26/91	38	00	16
11004.01	AIR CONDITIONING COMPRESSOR SERVICE	05/17/90	38	N	8
16009.11	FUEL INJECTION DRIVEABILITY	05/16/90	38	N	8
16018.10	TECH 1 FAMILIARIZATION	07/31/89	38	00	8
18001.02	SPECIALIZED ELECTRONICS TRAINING	05/26/89	38	Z	2

TRAINING CENTER CLASSES CURRENT YTD HOURS: 56
TRAINING CENTER PREV 3 YRS AND CURR HOURS: 144
CPT CURRENT YTD HOURS: 10
CPT PREV 3 YRS AND CURRENT HOURS: 54

*** END OF REPORT ***

RESUME OF
Lester J. Richards
19060 200th Ave.
Big Rapids, Michigan 49307
616-796-9426

PERSONAL DATA

Married, two children
Present Occupation - Acting Department Head, Automotive and Heavy Equipment Department, College of Technology, Ferris State University, Big Rapids, Michigan

EXPERIENCE

- January 1995 - Present
  Acting Department Head, Automotive and Heavy Equipment department. Responsibilities include coordination of budget and teaching schedules for the department as well as supervision of day to day operations for the Auto Body, Auto Service and Automotive and Heavy Equipment Management programs.

- August 1986 - January 1995
  Program Director and professor in the Automotive and Heavy Equipment department. Responsibilities include supervision of 18 faculty members in the Automotive Service Technology, Automotive Body and Automotive and Heavy Equipment Management programs. These programs have a combined enrollment of nearly 200 full-time students. Other responsibilities include program budget management, coordination of faculty development, curriculum revision and development, scheduling of students, facilities and staff, corporate relations and acquisition of funds and equipment for program operation.

- 1981 - August 1986
  Associate professor in the Automotive department, School of Technology. Duties included teaching classes in automotive management, service management, warranty administration as well as in the technical areas. These classes are in both the associate and baccalaureate degree programs. Also during this time I was responsible for a number of interns in automotive dealerships and in manufacturer's facilities throughout the country. Additional responsibilities included setting up a budget control system, a word processing system and a parts inventory control system for personal computers.

- 1975 - 1981
  Assistant professor in various courses in the Automotive Service, Heavy Equipment Service and Automotive Management programs at Ferris State University

- 1974 - 1975
  Administrative assistant to the Dean, School of Technology, Ferris State University

- 1970 - 1974
  Instructor in the Automotive department, Ferris State University

- 1957 - 1970
  Service manager and automotive service technician in a franchised automotive dealership

During my time as an instructor and administrator, I have maintained a close relationship with the automotive industry, both at the retail and the manufacturer level. I have done this in order to update myself in the latest technology and management techniques.

In September, 1988 we started a G.M. ASEP and in 1991 we started a Ford ASSET program. These are corporate sponsored cooperative programs designed to prepare technicians with a product specific education. I had the primary responsibility for the development of these programs at Ferris and I am the administrator in charge of their operation. We are presently in negotiations with Chrysler Corporation to start their corporate sponsored program at Ferris. We are planning on that start-up within the next year.

The Automotive and Heavy Equipment department has been a leader in the tech-prep articulation plan with secondary automotive programs. I have been involved as part of the steering committee that is formulating this model. We have also put together one of the first working articulation models and we plan to accept students with advance placement credits in the fall of 1996.

The automotive programs at Ferris enjoy excellent, ongoing relationships with most of the domestic and import automotive manufacturers which are documented by the number of vehicles, equipment, the technical support materials and the technical training provided.

EDUCATION

- 1977 MS, Occupational Education and Administration, University of Michigan
- 1974 Leadership Dealership Program, School of Education, University of Michigan
- 1972 BS Trade -Technical Education, Ferris State University

Since 1980 I have completed several classes, workshops and seminars on personal computer systems and software applications. In 1992 I completed a two day intensive training seminar on quality implementation. I have been involved in a quality implementation plan for Ferris.

ORGANIZATIONS AND AFFILIATIONS

- Member - Immanual Lutheran Church, Big Rapids
- Iota Lambda Sigma - Professional Fraternity (past president, local chapter)
- North American Council of Automotive Teachers
- Michigan Association of College Automotive Teachers (past president)

- UATA (University Automotive Technology Association)
- Rails to Trails support group
- Big Rapids Amateur Radio Club (past president)
- Various university committees

ADDITIONAL INFORMATION

- Reviewed and evaluated Marine Corps automotive and truck training at Camp Lejeune for the American Council on Education (August 1995)
- Reviewed and evaluated Chrysler educational material for the American Council on Education (April 1990)
- Campaign Manager for the successful election of our county sheriff (1984 and 1988)
- Served on the local property tax review board for three years
- Hobbies include golf, amateur radio, winter sports, bicycling and automotive projects
- Currently chairman of the automotive advisory committee for the local career center

REFERENCES

Mr. Robert Miller, Vocational Director
Mecosta - Osceola Int. School District
15830 190th Ave.
Big Rapids, MI 49307

Dr. Isabel Barnes, Dean
College of Allied Health Sciences
Ferris State University
200 Ferris Drive
Big Rapids, MI 49307-2740

Mr. Vordyn Nelson, Associate Dean
College of Technology
Ferris State University
1009 Campus Drive
Big Rapids, MI 49307-2280

Appendix H

Program Review Rating Categories

Continue the program: The program meets or exceeds all criteria and the job placement is sound or the curriculum is unique in the State of Michigan. Minor modifications may be needed.

Enhance the program: The program meets or exceeds all criteria and it warrants expansion in enrollment to meet the manpower needs in the State of Michigan. An A program enhancement may involve additional faculty/staff, equipment, or other resources and/or expansion in enrollment. However, such an expansion would not be initiated without the allocation of resources needed to maintain quality with an enlarged student body.

Continue the program with monitoring: Documented problem areas exist in a basically sound program that warrants continuation. The faculty and administration of the program will be monitored as to their progress in solving those problems.

Continue the program with redirection: Significant documented problems exist within the curriculum which should be addressed. Curricular revision (redirection) in accordance with accepted University policies and procedures will be undertaken by the faculty and administration of the program. The recommendations for redirection must be submitted as a part of the final program review report.

Reduce the program: The program meets or exceeds many of the criteria, but does not claim a unique position in the State of Michigan, the job market for its graduates is diminishing , or the enrollment is declining precipitously. It should, therefore, be reduced in enrollment and/or resources.

Discontinue the program: Evidence suggests that the program should be terminated.

950411