University Of New Mexico

Gallup Campus

Automotive Technology Department
Program Review

CERTIFICATE

September 2018

Department: Business and Applied Science

Prepared by: Ernesto Watchman, Visiting Lecturer.

Introductory Section and Background Information

0A: An executive Summary
0B: A brief description of the history of the program under review
0C: A brief description of the organizational structure and supervision of the program
0D: Information regarding specialized/external program accreditations
0E: A brief description of the previous Program Review for the program

Mark Remillard, Division Chair of Business and Applied Technologies

Recommendation for the AAS in Automotive Technology

Having been in the position of Division Chair for only six weeks at the writing of this review, I cannot offer in-depth commentary or analysis of the program, but given the numbers enrolled and the clear vision plan articulated by the faculty, I feel this is a strong and worthwhile program. The AAS in Automotive Technology provides graduates with job training and apprenticeships into job placement.

I would recommend two additions to the program:

1. A modularization of instruction to allow for more industry certifications so that students graduate with multiple and specialized skills within the automotive technology industry. Increasing certifications for students would make graduates more marketable.

2. The updating of equipment and increased certification for faculty in the program to ensure current and best practice knowledge and skills in the field to ensure high quality instruction and relevant job skills for graduates.

I believe the existing program should be retained, strengthened, and expanded to help UNMG connect to a broad range of programs and technologies.

Respectfully,

Mark Remillard
Division Chair, Business and Applied Technologies

and Axles, and Suspension and Steering. All of which, is currently offered at the UNM-Gallup campus automotive technology program for Certificate and Associates level degrees.

0C: Organization Structure

Chief Executive Officer:

Dr. James Malm

Dean of Instruction:

Dr. Daniel Primozic

Division Chair:

Mark Gerard Remillard

Faculty: Automotive

Full time Faculty:

Ernesto Watchman

Part Time Faculty:

Felix Benally

Abel Johnson

Administrative Assistant:

Bobby Campos

and shop activities hours. The current UNM-Gallup Automotive Technology curriculum and newly proposed curriculum change will be sufficient for Master level accreditation based on combined classroom and shop instructional activities contact hours. Documentation for certification application is a long and difficult process as far as time is concerned. The time involved to physically prepare the program in the areas of equipment, tools, repairs, replacement, arrangement, care, and time involved to prepare the shop for instruction and fulfill safety requirements are all obstacles. The cost to process an application for NATEF accreditation is estimated to be $1,650.00

ALSO, instituting a Topics Lab class would benefit students as certified instructor would teach and certify students in Snap-on or other industry certifications. Snap-on has provided a document (NC3) National Coalition of Certifications Centers that will partner with UNM-Gallup to certify faculty of whom would then be able to certify students. This is possible only through Snap-on equipment.

(NC3 can be viewed at http://www.nc3.net/ for more info)

Completing a vocational or other postsecondary education program in automotive service technology is considered the best preparation for entry-level positions.

0E: A brief description of the previous Program Review for the program

The previous UNM-Gallup Automotive Technology program review was prepared by Lorretta Notah, April 2013 with the assistance of student work studies.

The last report documented from curricula committee states:

"Advisement recommendations for AAS Auto Technology: (75 Credit Hours)
A short term (8 weeks) mechanical fundamental/familiarization course for 2 credit hours should be created that could be offered to any student desiring to study any technical program (auto-tech, welding, CRT, even construction tech.)
Many students in the technical programs have little or no knowledge or skills in general mechanics.
A 30 question quiz could be offered to test student's mechanical knowledge level and anyone scoring less than 24 correct answers would be required to take the mechanical fundamentals course listed above.
Seventy five credit hours for an AAS is excessive. If each of the eight courses listed at 6 credit hours was reduced to four credit hours, sixteen credit hours would be eliminated. The Practicum (AUTT 295) could be returned to a variable credit hour (4-9) to allow students to receive additional training in areas in which the student feels they need extra training. These changes would reduce the total number of credit hours required for graduation to 60-67 (even if the y were required to take the fundamentals course recommended.)

Document 1:

Program Goals

1A: Provide a brief overview of the vision and mission of the program and how the program fits into the vision and mission of the UNM-Gallup campus.

1B: Describe the relationship of the program's vision and mission to the University of New Mexico's vision and mission

1C: List the overall learning goals of the program

1D: Explain the manner in which learning goals are communicated to students

1E: Describe the program's primary constituents and stakeholders

1F: Provide examples of outreach or community activities (local, regional, national, and/or international) offered by the program

1B: Describe the relationship of the program's vision and mission to the University of New Mexico's vision and mission.

The Automotive Technology program at the UNM-Gallup campus strives to advance the institutional core competencies and learning outcomes of the University.

Every course includes components that assess the awareness of students and faculty understanding in, knowledge, skills, and/or abilities in communication, critical thinking, information competency, responsibility, technology, and given the area of focus, extensive discipline/subject specific content material.

Also, students must master specific skill sets for each class topic as a requirement of passing each course. These include, writing assignments, working in teams, computer competencies to retrieve information regarding vehicle diagnosis, and understanding technological knowledge.

1C: List the overall learning goals of the program

Our goal is to recertify the University of New Mexico-Gallup Campus Automotive Technology program through third party accreditations such as National Automotive Technicians Education Foundation (NATEF) in the CCTE program as well as the College Program to better certify students to be ready for the workforce.

The goals and objectives of the Automotive Technology Program are:

- The student will demonstrate proper safety practices and procedures
- The student will demonstrate a systematic automotive diagnostic and repair strategy as defined by NATEF (National Automotive Technicians Education Foundation)
- Document repairs of vehicles accurately and descriptive of concern, cause, and correction
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause and correction.
- Demonstrate accuracy, proficiency and quality in service performance and Develop professional attitudes, values, and goals
- Continually integrate current and future industry standards within the curriculum
- Comprehensive knowledge of employer expectations and ethical work practice

Computer assisted instruction: this method involves interaction of the student with programmed instructional material such as, Computer Aided Instruction, Computer Based Education, Computer Assisted Learning with various Tutorials, Simulations, and

Hands-on shop assignments: Students learn by giving them the training to take initiative for their own learning experiences. Learners are actively involved. Instructor facilitates a process of learning in which students are encouraged to be responsible and active.

1E: Describe the program's primary constituents and stakeholders

1) Students: Personal success throughout school, future opportunity.
2) School advisory board: Professional efficacy, fulfilling the schools mission, media coverage, accountability and job satisfaction.
3) Faculty and staff: Adequate yearly progress, meeting accountability and expectations.
4) Taxpayers: Getting a good return on their tax "investment" in school operations
5) Business community: Ability to hire graduates with skills needed, community economics
6) Other community members: Community pride and livability
7) Internal stakeholders: Work within the school system on a daily basis and coordinate daily operations
8) External stakeholders (automotive advisory board): work outside the schools, who have a strong interest in school outcomes.

1F: Provide examples of outreach or community activities (local, regional, national, and/or international) offered by the program.

Document 2:

Teaching and Learning – Curriculum

2A: Provide a detailed description of program curricula.

2B: Describe the contributions of the program to other units/programs within UNM-Gallup

2C: Describe the modes of delivery used for teaching courses

- To review basic electrical theory and learn the testing and overhaul procedures for electrical system components.

AUTT 295 Practicum in Auto Technology 3cr

- The student will work on the Gallp Campus in an assignment involving a variety of tasks equivalent to the functions and responsibilities of the line mechanic or parts counter person.

Total credits: 42

SUGGESTED COURSE SEQUENCING:

Recommended Course Sequence for full-time Students (part-time Students Should see an Academic Advisor to customize their educational plan)

UNM-GALLUP | CERT Automotive Technology

Term 1 - 15cr/hrs
AUTT 115 - 6cr
AUTT 130 - 6cr
MATH 115 - 3cr

Term 2 - 15cr/hrs
AUTT 111 - 6cr
AUTT 230 - 3cr
ENG 119- 3cr
IT 101-3cr

Term 3 - 15cr/hrs
AUTT 157 - 6cr
AUTT 167- 3cr
AUTT 295-3cr

Automotive Service Excellence (ASE) certified faculty guide students through the learning process in the automotive field of analytic and strategic approaches to repairs, maintenance, and new build of automotive equipment.
During the duration of the fall or spring semester, students are required to complete a series of tasks related to their area of training. Attached is a series of tasks students must know in order to advance to the next course of study or to graduate with a completion in AAS. Furthermore, potential employers require students to be experienced in the general areas of diagnosis and systems.

For example, included is a master automobile service technology task list in Brake Systems. Students are required to complete tasks listed as Priorities (must be completed **P1**-95%, **P2**-90%, and **P3**-75%).

4. Remove, clean, inspect, and/or replace brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble. P-1
5. Inspect wheel cylinders for leaks and proper operation; remove and replace as needed. P-2
6. Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings; perform final checks and adjustments. P-1

D. ***Disc Brake Diagnosis and Repair***

1. Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging, or pulsation concerns; determine needed action. P-1
2. Remove and clean caliper assembly; inspect for leaks, damage, and wear; determine needed action. P-1
3. Inspect caliper mounting and slides/pins for proper operation, wear, and damage; determine needed action. P-1
4. Remove, inspect, and/or replace brake pads and retaining hardware; determine needed action. P-1
5. Lubricate and reinstall caliper, brake pads, and related hardware; seat brake pads; inspect for leaks. P-1
6. Clean and inspect rotor and mounting surface; measure rotor thickness, thickness variation, and lateral runout; determine needed action. P-1
7. Remove and reinstall/replace rotor. P-1
8. Refinish rotor on vehicle; measure final rotor thickness and compare with specification. P-1
9. Refinish rotor off vehicle; measure final rotor thickness and compare with specification. P-1
10. Retract and re-adjust caliper piston on an integrated parking brake system. P-2
11. Check brake pad wear indicator; determine needed action. P-1
12. Describe importance of operating vehicle to burnish/break-in replacement brake pads according to manufacturers' recommendations. P-1

E. ***Power-Assist Units Diagnosis and Repair***

1. Check brake pedal travel with and without engine running to verify proper power booster operation. P-2
2. Identify components of the brake power assist system (vacuum and hydraulic); check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster. P-1
3. Inspect vacuum-type power booster unit for leaks; inspect the check-valve for proper operation; determine needed action. P-1
4. Inspect and test hydraulically-assisted power brake system for leaks and proper operation; determine needed action. P-3
5. Measure and adjust master cylinder pushrod length. P-3

F. ***Related Systems (i.e., Wheel Bearings, Parking Brakes, Electrical) Diagnosis and Repair***

1. Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine needed action. P-1
2. Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings. P-2
3. Check parking brake system and components for wear, binding, and corrosion; clean, lubricate, adjust and/or replace as needed. P-1

2B: Describe the contributions of the program to other units/programs within UNM-Gallup

The Certificate in Auto Technology program connects to/supports several other programs within the University. The Writing and Speaking requirement, ENGL 119, supports the English Department. The Business and Technology requirement, IT 101, supports the Business Department and cross lists that course in the Certificate in Information Technology program. The Math requirement, Math 115, supports the Math Department and is cross listed in the Certificate in Construction Technology and the Certificate in Welding programs.

All of the listed in the Certificate in Automotive Technology program are cross listed in the AAS in Automotive Technology program. These courses afford a smooth articulation into the AAS program.

2C: Describe the modes of delivery used for teaching courses

Direct and Indirect measures will be applied to all students in the AAS, Automotive Technology Program

Teaching Methods

1) **Lecture with, or without, various visual aids:** Lecturing conveys information that an instructor feels is most important, according to the lesson plan. Various visual aids will be utilized.
2) **Group problem solving, Collaborating, discussion, debate, and/or critique:** Group collaboration will allow students to actively participate in the learning process by talking with each other and listening to other points of view.
3) **Demonstration in shop and classroom:** demonstrating will allow students to personally relate to the presented information. Demonstrations help to raise student interest and reinforce memory retention.
4) **Computer assisted instruction:** this method involves interaction of the student with programmed instructional material such as, Computer Aided Instruction, Computer Based Education, Computer Assisted Learning with various Tutorials, Simulations, and
5) **Hands-on shop assignments:** Students learn by giving them the training to take initiative for their own learning experiences. Learners are actively involved. Instructor facilitates a process of learning in which students are encouraged to be responsible and active.

Document 3:

Teaching and Learning – Continuous Improvement

3A: Describe the program's assessment process and evaluation of student learning outcomes

- What skills, knowledge, and values are expected of all students at the completion of the program (refer to learning goals outlined in Document 1)?
- What are the student learning outcomes for the program?
- How have the student learning outcomes been changed or improved?
- How are the student learning outcomes clearly defined and measurable?
- How are the student learning outcomes communicated to faculty and students?
- What current direct and indirect assessment methods are used to evaluate the extent to which students are meeting the student learning outcomes?
- How have the program's assessment methods been changed or improved?

3B: Synthesize the impact of the program's annual assessment activities

- How have the results of the program's assessment activities been used to support quality teaching and learning?
- How have the results of the program's assessment activities been used for program improvement?
- Overall, how is the program engaged in a coherent process of continuous curricular and program improvement?
- How does the program monitor the effects of changes?

4. How are the student learning outcomes clearly defined and measurable?

Students are required to complete a series of tasks relevant to their area of training. For example, AUTT 115-400 Brakes systems, students are required to complete Tasks that are listed as priority 1 through priority 3. Each tasks may consist of varies objectives. Each completed objective ensures the instructors and potential employers students are understanding the material and are able to troubleshoot and repair vehicle concerns.

Refer to curriculum to see tasks in brake systems.

5. How are the student learning outcomes communicated to faculty and students?

Direct.

Meetings are held with full time and part time faculty before the start of an academic semester to go over expectations, goals and learning outcomes.

Students are expected to participate in orientations to go over shop safety, program expectations and attendance policies.

6. What current direct and indirect assessment methods are used to evaluate the extent to which students are meeting the student learning outcomes?

Direct, through observation in lab activities and simulations

Indirect, independent study. Book work assignments are assigned at the completion of each chapter presentation through PowerPoint.

Direct. *Students are required to participate in orientations at the beginning of every semester and are required to sign a statement of understanding for the expectations throughout the semester.*
Direct. *Students are required to participate in safety orientations at the beginning of every semester and are required to pass with 100% scores before allowed to enter lab area.*
Indirect: *Student are required to complete assigned end of chapter review questionnaires and lab activity tasks lists. Assignments that are submitted allow instructors to review areas of misunderstanding*

a. Instructors will keep track of student progress on required clock hours

2. How have the results of the program's assessment activities been used for program improvement?

   Recommendations are evaluated by automotive technology faculty and assessed for pros and cons. It was determined modeling the UNM-Gallup auto tech program after a dealership is the best way to teach students to prepare them for employment. Students are now able to write up workorders (work received) documents and speak with the customer one-on-one without the aid of an instructor. Also, students are able to research into service information manuals to determine the best method of replacing or repairing vehicle components.

3. Overall, how is the program engaged in a coherent process of continuous curricular and program improvement?

   An Automotive advisory board convenes to times a year. Each member is informed of student outcomes and daily activities. Members of the advisory board give recommendations of experience students must be skilled in order to succeed in the industry. Also, members review curriculum and give recommendations of priorities of tasks that students should know prior to graduation.

   Also, Faculty and cooperative apprenticeship students meet and discuss current training trends.

   This allows UNM-Gallup to stay current with the automotive industry.

4. How does the program monitor the effects of changes?

   No current model is available to track changes.

   However, since the fall of 2016, students have been in demand more in automotive industry dealerships or independent shops for internship opportunities or full/part time employment. Overall, 20 students have been successfully hired from the automotive technology program since fall of 2016.

4A: Provide information regarding student recruitment and admissions.

In general students are recruited and admitted by the usual means, advertising of the program online via the university, department, and program webpages, in the UNMG catalog, and by word of mouth among students. Admission into the program follows the same process as non-Automotive Tech students. All students must be accepted into the university and have sufficient scores on the Accuplacer Test to qualify them for university level Math and English courses. A minimum grade of C must be maintained in all courses in the Certificate program.

4B: Provide an analysis of enrollment trends, persistence, and graduation trends.

Looking at the enrollment numbers in the ASS in Automotive Technology, it appears that the student numbers have been on a slight decline pattern from 2013-2015 with a general increase in numbers from 2016 to the present. The number of students in the Fall has increased from 41 in 2013 to 58 in 2017. The numbers for Spring students shows a drop from 52 in 2013 to 43 in 2017. Currently, it appears that enrollment for both Spring and Fall of 2018 is at an increase.

The completion rate for the AAS in Automotive Technology program also shows increasing number of graduates in the last three years. In 2013 and 2014, there were no graduates in the program. In 2015, one student completed the program. In 2016, two students graduated, and in 2017, eight students graduated with a Certificate in Automotive Technology.

Some graduates of this program go on to complete their BA degrees in other fields at local universities such as University of New Mexico, Albuquerque, New Mexico State University in Grants or Las Cruces, Arizona State University in Phoenix, Western New Mexico University, or Navajo Technical University. For employment, many of our graduates are employed in the area by the Gallup Refinery, Gallup McKinley County, the Navajo Nation, local shops and business in the auto repair industry, or relocate to the areas to pursue further technical education or employment. Currently, no programs are in place to officially track graduates and record their career success, but this type of tracking would improve the program by providing graduate feedback on their preparedness for the job market upon graduation as well as identify area in need of improvement in the program from the graduate's perspective.

- Accuplacer Testing
- New Student Orientation
- Academic, Transfer and Career Advisement and Coaching
- Monitoring, Intervention & Early Alert
- Workshops

4D: Describe any student support services that are provided by the program.

Students are encouraged to seek and/or referred to the various support services on campus such as Accessibility Resource Center, Career Services, Center for Academic Learning (CAL), LGBTQ Resource Center, Transfer Resource Center, Trio/SSS, and Veterans Resource Center.

The Automotive program encourages students to join membership with UNM-Gallup auto club in order to gain extended hands on training in the auto shop after hours and are encouraged to network with other students.

Faculty also tutor students one-on-one if a students does not understand a certain topic or how to properly operate equipment, specialty tools and tools.

4E: Describe any student success and retention initiatives in which the program participates.

Cooperative internship opportunities. Students are aware opportunities are available to them through UNM-Gallup automotive to work as apprentices in the automotive industry. This allows students to get a head start on their career as automotive technicians. Also, student discounts are available to students of the auto tech program to purchase tools and parts at discounted rates.

Document 5:

Faculty:

5A: Describe the composition of the faculty and their credentials

5B: Provide information regarding professional development activities for faculty within the program

5C: If applicable, provide a summary and examples of scholarly/creative work of faculty members within the program

5D: Provide an abbreviated vitae (2 pages or less) or summary of experience for each faculty member

- **Abel Johnson:** Skills/knowledge building on over 25 years' work experience. Currently, Abel works as a Senior Automotive Technician for Windowrock Fleet management. Abel demonstrates a commitment to improving the UNM-Gallup auto tech program and is very knowledgeable in courses he instructs. His tasks include but not limited to, diagnosing/replacing engines, diagnosis noise and repairs, diagnosing/replacing transmissions, maintenance and light repairs, keep up to date in industry trainings, perform drivability work, servicing heating and air conditionings, be able to navigate online computer generated service manuals, supervise and train all incoming service techs. Some of his qualifications are as listed:
    a. Associates of Occupational Studies (Universal Technical Institute)
    b. ASE certified: A1 Engine repair, A2 Automatic Transmissions, A3 Manual Transmission and axles, A4 Steering and Suspension, A5 Brakes, A6 Electrical/Electronic systems, A7 Heating and Air-Conditioning, A8 Engine Performance.
    c. GM computer based training: fundamentals, Engine Performance, Diesel Engine Performance, Engine repair, Electrical/Electronics, Manual drive train and Axle, Automatic Transaxle/Transmission, Steering and Suspension, Brakes.

- **Felix Benally:** Knowledge/Skills building on 20 years' experience. Felix currently a master level ASE certified technician, works as an Automotive Technician for Amigo Chevrolet and has been employed by Amigos Chevrolet for over 20 years. Felix's knowledge and experience is very beneficial to the UNM-Gallup auto tech program as he is able to take lessons from the assigned text books, as well as use his experience and apply the techniques in a way that is understandable for his students. His tasks include but not limited to, diagnosing/replacing engines, diagnosis noise and repairs, maintenance and light repairs, keeping up to date in industry trainings, perform drivability work, servicing heating and air conditionings, electrical diagnosis, testing and diagnosis concerns, able to navigate online computer generated service manuals, supervises and trains all incoming service technicians. Some of his qualifications are as listed:
    a. Automotive certificate (Universal Technical Institute)
    b. ASE Master Technician certified: A1 Engine repair, A2 Automatic Transmissions, A3 Manual Transmission and axles, A4 Steering and Suspension, A5 Brakes, A6 Electrical/Electronic systems, A7 Heating and Air-Conditioning, A8 Engine Performance.
    c. GM training/Toyota training: Brake systems, Audio and Entertainment training, Diesel drivability, Airbag and other constraints, Chevy Hybrid

Document 6:

Resources and Planning

6A: Describe how the program engages in resource allocation and planning.

6B: Provide information regarding the program's budget including support received from the institution as well as external funding sources.

6C: Describe the composition of the staff assigned to the program (including titles and FTE) and their responsibilities.

6D: Describe the library resources that support the program's academic initiatives.

6C: Describe the composition of the staff assigned to the program (including titles and FTE) and their responsibilities.

The program consists of one full time faculty member, Ernesto Watchman, teaching three classes for total fifteen credits, each in both fall and spring semesters. There are also two part-time faculty members. Felix Benally teaches two classes in the fall semester for nine credits, and twelve credits in the spring. Abel Johnson teaches two classes for total of twelve credits each semester in the fall and spring.

6D: Describe the library resources that support the program's academic initiatives.

Zollinger Library provides a variety of services and resources that support the University's instructional programs and users' needs for personal enrichment and recreation. Knowledgeable staff are available to organize library materials, to help users locate information, and to assist them in using print and online resources and computer equipment

The library contains a computer lab, a conference room and group study rooms. In addition, the facility houses books, videos and periodical titles.

7A: Describe the facilities associated with the program, including, but not limited to, classrooms, program space (offices, conference rooms, etc.), laboratories, equipment, access to technology, etc.

The Automotive Technology department is located in Building 2 GH-CE1310

A fully equipped lab area allows students to get extended hands-on training to diagnosis and repair their own vehicles, and students may service vehicles for the community at no labor cost and in a timely fashion.
The Automotive Technology program Space is insufficient to house 40 students at a time. 2 part time faculty in the evenings are tasks to house 40 plus students and share the shop for instruction. This creates tension as students have multiple vehicles to service as space is insufficient to support a high volume of traffic at one time. The current design and set up has yet to be upgraded since year 2002.

Major equipment for instruction included: Hunter four post Wheel alignment, 3 hydraulic lifts, Hunter smart Wheel Balancer, 2 Coats wheel balancer, 2 wheel dismount/mount machines, 1 engine troubleshooting trainer, 2 transmission teardown benches, Snap-on vehicle diagnosis machine, A/C refrigerant flush/refill machine, off-car Brake lathe, on-car brake lathe, 3 transmission flush machines, 2 battery chargers, 47 inch smart TV for instruction, 4 electric motor bay doors.

The tool room houses a wide variety of specialty tools for instruction (complete list of tools is provided), every cabinet holds tools pertaining to a particular subject, for example in brakes: one cabinet inventories brake specialty tools only. Items found in the tool include: 7 cabinets, 3 fire proof cabinets, 3 battery chargers, 3 transmission flush machines, 1 welding machine, 1 on-car brake lathe, 2 filing cabinets, 2 drawers to inventory small specialty items, 2 transmission jacks, 2 engine hoists, 1 A/C flush/refill machine, 1 movable solvent tank,

The office holds documents for instruction as well as specialty tools. Items located in the shop office include: 3 cabinets to hold special tools, one office desk and computer, telephone, white board, 2 filing cabinets,

Classroom is adjacent to the shop, the spacing available is not sufficient to hold 20 students at a time. Students have to either sit on floor, stand in back of room, or stand by the door in order to hear presentations. The equipment to deliver instruction include: 1 overhead projector, 5 classroom computers, 6 wooden hardtop transmission teardown desk, 20 stools, 7 trainers (electrical, brakes, lightening, audio, charging, starting, etc),

Parking outside the shop is very small and difficult to maneuver vehicles exiting and entering the shop. 4 vehicles are available to students for training as they are donated to the program.

Document 8:

Program Comparisons

8A: Provide information on the distinguishing characteristics of the program. Discuss the program in comparison to other programs such as number of faculty, student characteristics, etc. Pay special attention to:

- Parallel programs at peer institutions
- Regional and national comparisons of academic program

Document 9:

Future Direction

9A: Provide a summary of strengths and challenges for the program

9B: Describe the program's strategic planning efforts

9C: Describe the strategic directions and priorities for the program.

Reviewed and Discussed by members of the Automotive Technology Faculty (Ernesto Watchman, Felix Benally, and Abel Johnson).

The Automotive Industry changes every 5 years. Working on today's vehicles requires an understanding of fundamentals and principles in technology associated with modern cars and sophisticated automobile vehicles. This means schools need to stay current with the automotive industry in order to properly educate students in its industry standards. The UNM-Gallup Automotive Department has been reviewed for its strengths and weaknesses by industry partners such as Tate's Auto Group, Snap-On Tools, Gurley Motor Company, and Navajo Nation Fleet Management in Window Rock, Arizona.

Positives:

a. Low cost tuition (as compared to other automotive programs)
b. Enrollment
c. Hands-on experience
d. Industry partnerships
e. Internship opportunities
f. Certified faculty
g. Popularity
h. Automotive Advisory committee
i.

Negatives:

A. Credit hours for completion
B. Space
C. Non-paid internships
D. Insufficient equipment available for demonstration
E. Limited amount of tools available
F. Non-third party accreditations
G. Outdated equipment
H. Budget
I.

The Automotive Department Advisory Committee determined that National Automotive Technicians Education Foundation (NATEF) Certification is a requirement and is possible to obtain for student and program recognition in Automotive Service Excellence (ASE) training in two years if the Automotive Department has the cooperation of other departments and with enough funding and other adjustments. Attendance in the Automotive Technology Program has slowly risen and all indications are that today's UNM-Gallup Auto technology program will continue to attract new students and retain current students. Our goal is to become NATEF certified in the CCTE program as well as the College Program to better certify the individual who will pursue the automotive field in ASE certifications. ASE certification is available in eight

9B: Describe the program's strategic planning efforts

Establishing a High Quality and Deliverable Curriculum and Program.

Already, a strategic Action Plan was drafted by Ernesto Watchman and submitted to the UNM-Gallup Dean of instruction, CFO, and Business and Applied Tech Division chairman for consideration. Also, a 5 year plan has been drafted and will be submitted to the Business and Applied tech Chairperson for consideration.

Refer to appendix 3A and 3B

9C: Describe the strategic directions and priorities for the program.

Future of the Automotive Program

1. Students will provide own personal tools and tool boxes and will be graded at the end of every semester to ensure they have a basic tool inventory put together. This will account for a grade. Students are encouraged to continue purchasing tools. Instructor will hand a basic tools list for students to use as a reference.
2. Design a cooperative program where students will be required to pass 1 year of auto technology and public speaking or inter personal communication classes in order to qualify for Co-op. This will ensure students are ready and qualified to serve as interns (apprentices) in the selected cooperative education recruited hosts business.
3. Students will be required to pass a minimum of 2 ASE certifications in order to graduate with their desired level of completion. (Certificate, AAS)
4. Students will be required to wear automotive uniform on college campus and work sites. (sponsored, furnished uniforms)
5. A system that will allow students participating in cooperative education to rotate in and out of college classrooms for 16 week. 8 weeks in classroom/shop training (9 hour days), 8 weeks in their selected automotive shop to apply their level of education. (Total: 320 hours a semester) instructor will have an end of year evaluation to determine if student advances to next level of training.
6. Building a successful program will allow UNM-G to obtain NATEF certification, GM ASAP certification, expansion, updated state of the art equipment.

- Technology in the classroom and in the lab area need upgrading due to out dated software and equipment.

Upgrading classroom and shop/lab may require UNM master plan facility department involvement.

UNM-Gallup also will have to provide travel and training opportunities for UNM-Gallup faculty and staff to remain at the forefront of national trends.

Approximate costs are as follows:

Planning/remodeling and Designing-	$40,000 estimate
Additional Faculty-	$55,000 direct salary (reoccurring)
New Equipment lab/classroom-	$150,000
Remaining operational costs-	$12,000

State of The Art Equipment

We are currently developing an action plan with industry partners such as Snap-On Tools. Snap-on has requested a blueprint to better design our shop layout and help to manage space as our current space is limited. The current budget is insufficient to cover costs to update equipment to be more state of the art.

Space Increase

An additional classroom is required that includes the technology to deliver streaming lessons. The lab shop also requires additional service bays to expand instructional delivery to accommodate both CCTE and College content. It should also contain a larger classroom that can accommodate 20-25 students. The addition of faculty members also requires additional office space. Finally, the program will need increased storage space for specialty tools and equipment. We hope to work with the Budget and Long-Term Planning Committees to improve the program while meeting other institutional goals and maintaining a suitably staffed, effective program.

APPENDIX

0A-Syllabus

1A-Ernesto Watchman CV
1B-Felix Benally CV
1C-Abel Johnson CV

2A-Shop Layout
2B-Tools/Equipment

3A-Strategic Action Plan
3B-5Year Plan

UNM GALLUP

Name of Division: **Semester:**	**Automotive Technology** **Spring 2018**
Instructor Name: Office Location Office Hours E-mail Telephone Class Meeting Days/Times Location	**Ernesto Watchman** GH 1311B or CH 167E (preferred) 8:00-9:00am Mon-Fri, 11:15am -12:15pm Mon-Fri (or schedule an appointment) *Ewatch10@unm.edu* (505) 863-7529 or (505) 863-7641 Tuesday and Thursday 1230pm to 0530pm GGH 1310

Syllabus

(Common across all sections)

Title of Course:	**Automotive Suspension and Steering**
Course Number	**AUTT 157-400**
Course Description	A detailed study of steering and suspension components and their repair and alignment
Credit Hours and Contact Hours	6 credit hours / 160 contact hours
Pre-requisites/co-requisites	N/A
Course Content and Scope: Understand overall Suspensions and Steering Systems and Become ASE Certified	**Learning Objectives and Outcomes** Upon successful completion of this course the student should be able to: 1. Understand the basic components of the Steering system. • Diagnosis and repair of the Steering System 2. Understand the basic components of the Suspension system.

ARC will conduct an intake and, if appropriate, will provide an approved academic accommodation notification that will be sent to you. At that point, you may contact me to review the letter and discuss these accommodations in relation to your course.

e of Non-Discrimination: The University of New Mexico-Gallup, as an equal opportunity/affirmative action employer and educator, lies with all applicable federal and state laws regarding nondiscrimination and affirmative action. The University of New Mexico-p is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race/ethnicity, color, national , age, spousal affiliation, sex, sexual orientation, gender identity, medical condition, disability, religion, pregnancy, genetic nation, or veteran status in employment, educational programs and activities, and admissions, and provides equal access to the Boy s and other designated youth groups. Inquiries or complaints may be addressed to the Office of Equal Opportunity whose Director as the 504/ADA Coordinator and Title IX Coordinator on UNM main campus: 505-277-5251. For referrals to main campus see: Gallup Title IX Coordinator; Director of Student
s, SSTC Room 276. Telephone: 505-863-7508. For Referrals to main campus regarding Section 504 compliance; Student Success alist, Gurley Hall Room 2205 B. Telephone: 505-863-7527.

Course Outline

(May vary according to Instructor)

Teaching Methods

1) **Lecture with, or without, various visual aids:** Lecturing conveys information that an instructor feels is most important, according to the lesson plan. Various visual aids will be utilized.
2) **Group problem solving, Collaborating, discussion, debate, and/or critique:** Group collaboration will allow students to actively participate in the learning process by talking with each other and listening to other points of view.
3) **Demonstration in shop and classroom:** demonstrating will allow students to personally relate to the presented information. Demonstrations help to raise student interest and reinforce memory retention.
4) **Computer assisted instruction:** this method involves interaction of the student with programmed instructional material such as, Computer Aided Instruction, Computer Based Education, Computer Assisted Learning with various Tutorials, Simulations, and
5) **Hands-on shop assignments:** Students learn by giving them the training to take initiative for their own learning experiences. Learners are actively involved. Instructor facilitates a process of learning in which students are encouraged to be responsible and active.

Evaluation/Grading Methods (Attach Rubric if available)

A student's grade will be based on multiple measures of performance, and will reflect the level of accomplishment of the objectives set forth above as well as a level of understanding of the topics enumerated under "Content and Scope." A final grade of "C" or better will indicate that the student has the ability to successfully apply the principles taught in this course to subsequent courses, to the work-place, or to personal goals as appropriate. The assessment process will also measure independent critical thinking skills and will reflect the student's ability to demonstrate their accomplishments by:

1) Performance on written or oral examinations
2) Performance on outside assignments including shop assignments
3) Contributing to class discussion
4) Maintaining attendance per current policy
5) Hands-on diagnosis and repair
6) Completion of assigned ASE/NATEF task lists

on campus)

- **No horse play**
- **Safety orientation and test must be completed before students entering shop**
- **Safety glasses to be worn during all Lab assignments.**
  - **No safety glasses, no shop.** If caught in shop without safety glasses on, student will immediately return to classroom and watch video on safety. An oral test will follow.
- **All shop projects must be approved by the instructor.**
- **Shop projects and rules**
  - No work order, no work done! (work order must be filled out prior to vehicle service, customer signature required)
  - fender covers on every vehicle with hood open
  - seat covers and floor mates in vehicles
  - tools must returned to its box or cabinets
  - Computers are to be used only for vehicle repair information, specifications, Mindtap assignments, and shop related projects
  - Work shirts to be worn at all times during class and lab projects
  - **No shorts, tank tops, sandals, flip flops, sweat pants allowed in shop (use common sense)**
  - No vehicle will remain in shop stalls for a period of 1 week. Unless permitted by instructor (after which, vehicle will be pushed to parking area)
  - No vehicle will remain in parking area for more than 3 weeks. Unless permitted by instructor (vehicles will be towed at owners expense)
  - All project vehicle must have proper tags
  - Do not take any keys out of shop area unless permitted by instructor
  - Report all incidents or accidents to the instructor immediately
  - Student participation in shop clean up required (weekly)
  - **NO PARKING IN BACK UNLESS YOUR VEHICLE IS BEING WORKED ON WITH PROPER TAGS VISIBLE**
    - ➢ Campus police will be notified and a ticket will be issued
- **Must sign syllabus, safety, emergency contact, lab, class rules and eye protection agreement forms**
- **Abide by all rules and regulations set forth by the University of New Mexico Student Hand Book.**

Weekly Schedule of Topics, Readings, Assignments, Tests and other Activities
(SUBJECT TO CHANGE)

Week One	**<u>Introductory to the Automotive industry:</u> Tools and Shop Procedures (Shop Manual), Safety Orientation (Videos, Lecture) and Safety Test, Shop Clean up**
Week Two	**<u>Chapter 1:</u> Introductory to suspension and steering systems (classroom manual)** **<u>Chapter 2:</u> Basic theories**

	(classroom and shop manual) **(½ lab and ½ classroom instruction) Job Sheet**
Week Ten	**Chapter 13: Rack and Pinion Gears and Four Wheel Steering; Diagnosis and services (classroom and shop manual)** **(½ lab and ½ classroom instruction) Job Sheet**
Week Eleven	**Chapter 14: Recirculating Ball Steering gears** **(½ lab and ½ classroom instruction)**
Week Twelve	**Review chapters 12-14** Lab work and complete assignments
Week Thirteen	Lab work and complete assignments
Week Fourteen	Lab work and complete assignments
Week Fifteen	**Review Suspension and Steering systems in order to prepare for final. All Assignments due!** (Job sheets, Classroom manual review questionnaire, etc.)
Week Sixteen	**FINAL WEEK**

UNM GALLUP

Name of Division: **Semester:**	**Automotive Technology** **Fall 2018**
Instructor Name: Office Location Office Hours E-mail Telephone Class Meeting Days/Times Location	**Ernesto Watchman** CE 1311B or CH 167E (preferred) 8:00-9:00am Mon-Fri, 11:15am -12:15pm Mon-Fri (or schedule an appointment) *Ewatch10@unm.edu* Shop: (505) 863-7529 or Office: (505) 863-7641 Tuesday and Thursday 1230pm to 0530pm CE 1310

Syllabus

(Common across all sections)

Title of Course:	**Brake Systems**
Course Number	**AUTT 115-400**
Course Description	The study of modern brake theory including drum and disc-type brakes. Mechanical and hydraulic principles as they pertain to brakes will be covered.
Credit Hours and Contact Hours	6 credit hours / 160 contact hours
Pre-requisites/co-requisites	N/A
Course Content and Scope: Understand overall Suspensions and Steering Systems and Become ASE Certified	**Learning Objectives and Outcomes** Upon successful completion of this course the student should be able to: 1. Understand the basic components of the Brake system. • Diagnosis and repair of the Brake system 2. Understand the basic components of the Brake system. • Diagnosis and repair of the Brake system

ARC will conduct an intake and, if appropriate, will provide an approved academic accommodation notification that will be sent to you. At that point, you may contact me to review the letter and discuss these accommodations in relation to your course.

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rs, SSTC Room 276. Telephone: 505-863-7508. For Referrals to main campus regarding Section 504 compliance; Student Success alist, Gurley Hall Room 2205 B. Telephone: 505-863-7527.

Course Outline

(May vary according to Instructor)

Teaching Methods

1) **Lecture with, or without, various visual aids:** Lecturing conveys information that an instructor feels is most important, according to the lesson plan. Various visual aids will be utilized.
2) **Group problem solving, Collaborating, discussion, debate, and/or critique:** Group collaboration will allow students to actively participate in the learning process by talking with each other and listening to other points of view.
3) **Demonstration in shop and classroom:** demonstrating will allow students to personally relate to the presented information. Demonstrations help to raise student interest and reinforce memory retention.
4) **Computer assisted instruction:** this method involves interaction of the student with programmed instructional material such as, Computer Aided Instruction, Computer Based Education, Computer Assisted Learning with various Tutorials, Simulations, and
5) **Hands-on shop assignments:** Students learn by giving them the training to take initiative for their own learning experiences. Learners are actively involved. Instructor facilitates a process of learning in which students are encouraged to be responsible and active.

Evaluation/Grading Methods (Attach Rubric if available)

A student's grade will be based on multiple measures of performance, and will reflect the level of accomplishment of the objectives set forth above as well as a level of understanding of the topics enumerated under "Content and Scope." A final grade of "C" or better will indicate that the student has the ability to successfully apply the principles taught in this course to subsequent courses, to the work-place, or to personal goals as appropriate. The assessment process will also measure independent critical thinking skills and will reflect the student's ability to demonstrate their accomplishments by:

1) Performance on written or oral examinations
2) Performance on outside assignments including shop assignments
3) Contributing to class discussion
4) Maintaining attendance per current policy
5) Hands-on diagnosis and repair

	• *Explain the importance of kinetic and static friction in a brake system* • *Explain how work is accomplished* • *Discuss hydraulic principles* • *Define and explain the basic electrical term: Amperes, Voltage, and Resistance* • *Explain how to use Ohms Law* (classroom instruction)
Week Three	**Review Chapters 1 and 2.** **Chapter 3: Related Systems: Tires, Wheels, Bearings, and suspensions** • *Describe the basic kinds of tire construction and identify the most common construction method for modern tires* • *Explain the most important effects of tire design and condition on braking performance* • *Identify the common types of wheel and axle bearings used on cars and light trucks* • *Identify the basic wheel alignment and steering angles* • *Explain how the condition of steering and suspension parts can affect braking* (classroom instruction)
Week Four	**Review Chapter 3.** **Chapter 4: Master cylinder and Brake Fluids** • *Explain the differences between different DOT brake fluid specifications* • *Identify the parts and explain the operation of a brake pedal and pushrod* • *Explain the purpose and operation of the Front-to-rear and diagonally split hydraulic systems* • *Describe the purpose of the master cylinder* • *Identify the main parts of a master cylinder* **Chapter 5: Hydraulic lines, Valves, and Switches** • *Describe the purpose and types of hydraulic brake lines* • *Identify the two types of flares used on brake line tubing* • *List the general precautions for working with brake tubing and hoses* • *Explain the purpose, parts, and operation of a metering valve* • *Explain the purpose, parts, and operation of a proportioning valve* • *Explain the purpose, parts, and operation of a differential valve* • *Describe the purpose, parts, and operation of a brake failure warning switch* (½ lab and ½ classroom instruction)
Week Five	**Review chapters 4 and 5.** **Chapter 6: Power Brakes Systems**

Week Nine	**<u>Chapter 10:</u> Electrical Braking Systems** • *Define and understand the electronic terms commonly associated with electrical brake systems* • *Identify the components of a typical ABS system and their operations* • *List and explain the operation of the components for a TCS and other electric controlled sensors* **<u>Chapter 11:</u> Advanced Braking Systems** • *Compare how fatality rates for miles traveled have been reduced* • *Describe the history and need for stability control systems* • *Describe active braking* • *Describe the operation of a regenerative braking system on a hybrid vehicle* (½ lab and ½ classroom instruction)
Week Ten	**<u>Review Chapters 10 and 11.</u>** Shop Demonstrations And Job Sheet Assignment
Week Eleven	Shop Demonstration And Job Sheet Assignment
Week Twelve	Shop Demonstration And Job Sheet Assignment
Week Thirteen	Shop Demonstration And Job Sheet Assignment
Week Fourteen	Shop Demonstration And Job Sheet Assignment
Week Fifteen	**Review Brake systems in order to prepare for *final test***
Week Sixteen	***FINALS WEEK TEST*** *(written or demonstrative)*

UNM GALLUP

Name of Division: **Semester:**	**Automotive Technology** **Fall 2018**
Instructor Name: Office Location Office Hours E-mail Telephone Class Meeting Days/Times Location	Felix Benally GH 1311B 1715-2200 GGH 1310 fbenalll@unm.edu (505) 863-7529 Monday and Wednesday 1620-2120 GGH 1310
Syllabus *(Common across all sections)*	
Title of Course:	**Electrical System Repair**
Course Number	**AUTT 130**
Course Description	Electrical theory and diagnosis. Starting, charging, lighting and related electrical systems in automotive application will be studied
Credit Hours and Contact Hours	6 credit hours / 160 contact hours
Pre-requisites/co-requisites	N/A
Course Content and Scope Understand overall electrical theory and become ASE Certified	**Learning Objectives and Outcomes** Upon successful completion of this course the student should be able to: • List and describe the operation of the starting and charging system. • Discuss the general electrical system diagnosis. • Describe a typical starting system

	• Explain the basic battery diagnosis and service. • Describe the basic parts of a charging system. • Explain the parasitic draw on a battery. 1. Use repair manuals and reference manuals, both printed and computer data base 2. Perform proper replacement of defective components 3. Complete ASE/NATEF task lists relevant to ASE/NATEF Standards

DISABILITY POLICY **FALL 2018**

In keeping with University of New Mexico policy (University Business Policies and Procedures Manual: **"Policy 2310:** Academic Adjustments for Students with Disabilities") and defined sections: **Section 504** of the Rehabilitation Act of 1973, **Section 508:** The Rehabilitation Act Amendments of 1998, **ADA:** The Americans with Disabilities Act of 1990, and the **ADAA:** The American with Disabilities Act Amendments of 2008 - of providing equal access to individuals with disabilities, instructors are strongly encouraged to include a statement on their syllabus informing students that academic accommodations can be provided on the basis of disability if the student follows the protocol described. The following statement contains all of the elements that should be present. Instructors may want to make changes based on style preference or particular course content. It is strongly recommended that you also read this statement to the students at the start of each semester when reviewing course policies.

"In keeping with the university's policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations is welcome to meet with (instructor Name) _____ privately.
All conversations will be kept confidential (between student and instructor).
Students requesting any accommodations will also need to contact:
Student Services – Accessibility Resource Center (ARC)

Mary Lou Mraz, MSEd, MPA, LMSW **UNM Student Success Specialist** **Phone: (505) 863-7527** **Location: Gurley Hall 1127** **Email: mloumraz@unm.edu**	**FOR messages/appointments:** **UNM Gallup ARC** **Front Desk** **505-863-7757**

ARC will conduct an intake and, if appropriate, will provide an approved academic accommodation notification that will be sent to you. At that point, you may contact me to review the letter and discuss these accommodations in relation to your course.

Early intervention can make all the difference in helping students achieve academic success. It also shows that the instructor made a good faith effort to inform students of their rights and responsibilities in this area, and that this effort was done in a timely manner.

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Course Outline

(May vary according to Instructor)

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3) Contributing to class discussion
4) Maintaining attendance per current policy
5) Hands-on diagnosis and repair

6) Completion of assigned ASE/NATEF task lists

FINAL GRADE SCALE: (possible 100% score)

1) Attendance 10%
2) Work assignments 15%
   - ➢ End of Chapter questionnaires, activities, discussions
3) Quizzes 15%
4) Participation 30%
   - ➢ Lab Work, Shop Performance, presentation
5) Mid-Term Exam 15%
6) Final Exam 15%

Grading Scale

98-100 = A+	87-89 = B+	77-79 = C+	67-69 = D+
93-97 = A	83-86 = B	73-76 = C	63-66 = D
90-92 = A-	80-82 = B-	70-72 = C-	60-62 = D-

59 & Below = F

Required Text(s) & Supporting Materials

- **Today's Technician Automotive Electricity & Electronics,** 6th edition
  2 part system: Shop Manual and Classroom Manual
  Author: Barry Hollembeak
- Safety glasses **(MANDATORY)**
- Personal Tools **(OPTIONAL)**
- Work Shirt (Tucked in) and Leather Work Boots
- Test Light
- DVOM Meter

Assessment Methods

- Competencies, written and hands on activities set forth by the National Automotive Technicians Education Foundation.

Weekly Schedule of Topics, Readings, Assignments, Tests and other Activities
(SUBJECT TO CHANGE)

Week One	**Safety Orientation and Safety Test, Shop Clean up**
Week Two	**Chapter 1: Introduction To Automotive Electrical And Electronic Systems** • *The importance of learning automotive electrical systems* • *The role of electrical systems in today's vehicles* • *The interaction of the electrical systems* • *The purpose of the starting system* • *The purpose of the charging system* • *The role of the computer in today's vehicles* • *The purpose of vehicle communication networks* • *The purpose of various electronic accessory systems* • *The purpose of passive restraint systems* • *The purpose of alternate propulsion systems*

Week Three	**Review Chapter 1.** **Chapter 2: Basic Theories** • *Explain the theories and laws of electricity* • *Describe the difference between insulators, conductors, and semiconductors* • *Define voltage, current, and resistance* • *Define and use Ohm's law correctly* • *Explain the difference between AC and DC currents* • *Define and illustrate series, parallel, and series-parallel circuits and the electrical laws that govern them* • *Explain the theory of electromagnetism* • *Explain the principles of induction* (classroom instruction)
Week Four	**Review Chapter 2.** **Chapter 3: Electrical And Electronic Components** • *Describe the common types of electrical system components used and how they affect the electrical system* • *Explain the operation of the electrical controls, including switches, relays, and variable resistors* • *Explain the basic function of capacitors* • *Describe the basic operating principles of electronic components* • *Explain the use of electronic components in the circuit* • *Explain the purpose of circuit protection devices* • *Define circuit defects, including opens, shorts, grounds, and excessive resistance* • *Explain the effects that each type of circuit defect has on the operation of the electrical system* (½ lab and ½ classroom instruction)
Week Five	**Review chapter 3.** **Chapter 4: Wiring And Circuit Diagrams** • *When single-stranded or multistranded wire should be used* • *The use of resistive wires in a circuit* • *The construction of spark plug wires* • *How wire size is determined by the American Wire Gauge (AWG) and metric methods* • *How to determine the correct wire gauge to be used in a circuit* • *How temperature affects resistance and wire size selection* • *The purpose and use of printed circuits* • *Why wiring harness are used and how they are constructed* • *The purpose of wiring diagrams* • *The common electrical symbols that are used* • *The purpose of the component locator* (½ lab and ½ classroom instruction)

Week Six	**<u>Review chapter 4.</u>** **<u>Chapter 5</u>: Automotive Batteries** • *Describe the purpose of a battery* • *Describe the construction of conventional, maintenance-free, hybrid, and recombination batteries* • *Describe the main elements of a battery* • *Describe the chemical action that occurs to produce current in a battery* • *Describe the chemical reaction that occurs in a battery during cycling* • *Describe the function of HEV batteries* • *Describe the operation and purpose of ultra-capacitors* • *Describe the different types of battery terminals used* • *Describe the methods used to rate batteries* • *Determine the correct battery to be installed into a vehicle* • *Explain the major reasons of battery failure*
Week Seven	**<u>Review chapter 5.</u>** **<u>Chapter 6</u>: Starting Systems And Motor Designs** • *The purpose of the starting system* • *The components of the starting system* • *The difference between starter drive mechanisms* • *The operation and features of the permanent magnet starter* • *The purpose of the inverter module* • *The operating principles of integrated starter generator (ISG) systems* (½ lab and ½ classroom instruction)
Week Eight	**Continuation of Chapter 6** ***Mid term quiz*** *(written or demonstrative)*
Week Nine	**<u>Chapter 7: Charging Systems</u>** • *The purpose of the charging system* • *The major components of the charging system* • *The function of the major components of the AC generator* • *The two styles of stators* • *How AC current is rectified to DC current in the AC generator* • *The operation of charge indicator, including lamps, electronic voltage monitors, ammeters, and voltmeters* • *The purpose of the DC/DC converter for charging the HEV auxiliary battery* **<u>Chapter 8:</u> Lighting Circuits** • *The operation and construction of automotive lamps* • *The difference between conventional sealed-beam, halogen, and composite headlights lamps* • *The operation of the dimmer switch*

	• *The operation of the various exterior light systems, including parking, tail, brake, turn, side, clearance, and hazard warning lights* • *The operation of the various interior light systems, including courtesy and instrument panel lights* (½ lab and ½ classroom instruction)
Week Ten	**Review Chapters 7 and 8.** Shop Demonstrations And Job Sheet Assignment
Week Eleven	Shop Demonstration And Job Sheet Assignment
Week Twelve	Shop Demonstration And Job Sheet Assignment
Week Thirteen	Shop Demonstration And Job Sheet Assignment
Week Fourteen	Shop Demonstration And Job Sheet Assignment
Week Fifteen	Review Electrical systems in order to prepare for *final test*
Week Sixteen	***FINALS WEEK TEST*** *(written or demonstrative)*

1A-Ernesto Watchman CV

Ernesto Watchman

865 Lewann Drive / Gallup, New Mexico 87301 / C: (505)360-6380 / Ewatch10@unm.edu

Summary

Dedicated Automotive Technician Instructor prepared to take UNM-Gallup CTE program to a new level, based on 15 years industry and 6 years supervision experience.

Education

Spring 2012-Spring 2104 / Associates in Applied Science / University of New Mexico-Gallup Automotive Program / Graduated May 2014 / Dean's List 2012 / Nominated for Instructor for the Year 2016 with the University of New Mexico / ASE Certified / FCA certified training in Automotive repairs / ACTE Region IV conference / NCSL leadership training / New Mexico ACTE Conference / Defensive Driver UNM

Highlights

- Reconfiguration, course modification and development; faculty retention and leadership building management; maintained a student centric approach and a commitment to ensuring all academic excellence
- Strongly committed to bringing new technology into the classroom and lab to further engage and capture student interest
- Developed and established an innovative program to attract and retain Students, and energized academic offerings to enhance career and professional development outcomes for students
- Developed, initiated and maintained business relationship with various dealership, independent shops, tool franchises and small business start ups

Experience

August 2016- Present Visiting lecturer / The University of New Mexico – Gallup

- Developed a Strategic Action plan for the Automotive Technology Program
- Developed and Participated in Automotive Technology Advisory Board Committee meetings
- Initiated Community outreach and dealership Internship sponsorships
- Planned and facilitated small industry funded initiatives such as Snap-On Tools partnership and discounts, O Reilly Parts/Tools discounts, Dealership providing internship uniforms, Auto Club fundraisers, various automotive tool donations for students
- Engaged in Workforce development with Zuni tribe and Navajo Nation
- Planned Community Education such as Automotive Maintenance and Light repair for a non-credited program
- Supervised large capacity of enrolled students and two part time faculty
- Coordinated day to day operations
- Attended professional development and various general manager meetings
- Developed long range plans for the Automotive Technology Program
- Initiated program assessment reports
- Initiated and monitored annual staff evaluations
- Planned and facilitated faculty development by attending training and training part time faculty
- Provided leadership for development of action plans and objectives that support the mission of the University
- Promoted and implement a strategic learning environment for students
- Collaborated and implemented Automotive Technology Advisory Committee Board's effective and efficiency strategies
- Participated and collaborated on institution effectiveness initiatives including assessment and program reviews
- Developed, implemented and monitored Faculty Chair Evaluation Agreements
- Advocated on behalf of Automotive Technology program concerns

The University of New Mexico

Gallup Branch

has conferred upon

Ernesto D. Watchman

the degree of

Associate of Applied Science in

Automotive Technology

with all the rights and privileges appertaining to that degree,
in testimony whereof the Regents of the University upon recommendation
of the Faculty have granted this diploma bearing the seal of the University
this seventeenth day of May, two thousand and fourteen.

Jack L Fortner
President of the Regents

Secretary of the Regents

THE UNIVERSITY OF NEW MEXICO · 1889 ·

Robert G. Frank
President of the University

Chouki Abdallah
Provost of the University

1B-Felix Benally CV

Felix Benally

P.O. Box 4299 Gallup, New Mexico 87305 (505) 879-5523 felixb57.fb@gmail.com

EXPERIENCE

- **Automotive Technician, Amigo Chevrolet; Gallup, New Mexico — 1996-present**
  - Expertise knowledge and experience in working with all components of a motor vehicle.
  - Experience disassembling and reassembling engines and transmissions.
  - Service and repair AIRBAG systems.
  - Perform diagnostics and drivability tests.
  - Perform maintenance intervals on vehicles.
  - Mentor co-workers concerning electrical aspects of motor vehicles.
  - Educate drivers and vehicle owners concerning maintenance and care.
  - Hosted "New Car Owner Clinics" to educate new drivers about their vehicles.

EDUCATION AND CERTIFICATIONS

- **Gallup High School - High School Diploma, 1992**
- **Universal Technical Institute - Automotive Certificate, 1994**
- **ASE Master Tech Certification - 2010- Present**

TRAINING

- **Braking System Training Course, 2005**
- **Audio & Entertainment Training Course, 2006**
- **Diesel Drivability Training Course, 2006**
- **AIRBAG Training Course, 2007**
- **Engine Performance Training Course, 2007**
- **HVAC Training Course. 2007**
- **Body Electrical Training Course, 2008**
- **Chevy Hybrid Training Course, 2010**

SKILLS

- Confident and capable in leading and supervising others.
- Comfortable in public speaking.
- Strong communication skills and extra
- Able to work well as a member of a team as well as independently.

REFERENCES

- Avery Kesner, 505-870-3504
- Edward Sanchez, 505-979-0264
- Hank Stokes, 505-870-4978

Felix Benally
P.O. Box 4299
Gallup, N.M. 87305
Cell:(505)879-5523

December 4, 2012

Automotive Dept.
UNM Gallup Campus
200 College Drive
Gallup, NM 87301

To whom it may concern:

I am responding to your job opening on UNMJobs, regarding the temporary position in the Automotive Department. Please find enclosed my resume showing my education, experience, and background.

I have over fifteen years experience in automotive repair. Three of those years involved mentoring fellow co-workers.

Throughout my years in this field I have had experience working on all areas of a vehicle. I have disassembled and reassembled engines, transmissions, partial teardowns of the interior and reassemble. I am currently in the electrical department where I do wiring repairs, drivability issues and diagnose "check engine" light. I also service and repair AIRBAG systems, as well as perform maintenance intervals on vehicles. I am currently serving as a mentor for an individual in how to repair vehicles with proper procedures. I enjoy mentoring and educating individuals on how a vehicle properly functions.

Thank you for your time and consideration.

Sincerely,

Felix Benally

Universal Technical Institute

10695 West Pierce Street , Avondale, AZ 85323
(623) 245-4600 or Call Toll Free (800) 859-1202

Felix J. Benally
Address: Sunset Landing #2011
Glendale, AZ 85302
Current Status: Graduated
Unofficial Transcript as of 10/9/2018

I D Number: 311709
Start Date: 9/7/1993
Graduation Date: 6/17/1994
Last Date Attended: 6/17/1994
SSN: --- -- 4443

Credentials	Program	Credits Required	Outcome
Certificate Awarded	U00106 - Certified Automotive Technology I	54.0	Graduated 6/17/1994

			1	2	3	4	5		6	7
9/7/1993	ADTC-101-3	Automotive Engines & Repair	81.0	108.0	100.0	99.2	81.0	B	0.25	4.5
9/27/1993	ADTC-107-3	Brakes	80.0	88.0	100.0	98.3	80.0	B	0.50	4.5
10/18/1993	ADTA-106-3	Automotive Power Trains	74.0	95.0	100.0	99.2	74.0	C	0.25	4.0
11/8/1993	ADTC-117-3	Electronic Fundamentals	81.0	100.0	100.0	90.0	81.0	B	3.00	5.0
11/29/1993	ADTC-122-3	Electronic Technology	87.0	100.0	100.0	90.0	87.0	B	3.00	5.0
1/3/1994	ADTA-109-3	Automatic Transmissions	81.0	90.0	100.0	99.2	81.0	B	0.25	5.0
1/24/1994	ADTA-104-3	Fuel & Ignition Systems	78.0	100.0	100.0	100.0	78.0	C	0.00	5.0
2/14/1994	ADTA-105-3	Driveability & Emissions	86.0	100.0	100.0	100.0	86.0	B	0.00	4.0
3/7/1994	ADTA-125-3	Professional Applications	90.0	93.0	100.0	100.0	90.0	A	0.00	5.0
3/28/1994	ADTA-126-3	Advanced Diagnostic Systems	83.0	96.0	98.2	78.3	83.0	B	6.50	4.0
5/9/1994	ADTC-108-3	Climate Control	81.0	80.0	100.0	86.7	81.0	B	4.00	4.0
5/31/1994	ADTA-102-3	Power & Performance IA	97.0	91.0	100.0	95.0	97.0	A	1.50	4.0

1 - Class Work: Average of written quizzes and tests for the course

2 - Lab Work: Quality of lab work, Adherence to proper procedures, safety procedures, use of tools and equipment, troubleshooting.

3 - Professionalism: Adherence to school rules, attitude and initiative, tardiness, following instructions, cleanliness and appearance.

4 - Attendance: Absenteeism

5 - Course Grade

6 - Hours Absent

7 - Credit Hours

GPA	**3.00**
Attendance Rate	**98.22**
Total Credit Hours Earned	**54.00**
Average Lab Composite	**95.08%**

UNOFFICIAL TRANSCRIPT

Winter 2013 - Registration for Winter 2013 testing is now open! The deadline to register is Feb. 21, 2013. Testing will begin on Jan. 2 and continue through Feb. 28, 2013

Certificates - Certificates from Fall testing will be mailed in December

Alerts

One or more of your certifications is expiring soon. **Click here** to view your tests and register for recertification.

Certification Status

Fall certificates will be mailed in December. To get an official ASE Status Letter *right now*, click on the "View Status Letter" button below.

Designations

Certificates	Most Recent Testing Period	Test Series	Last Printed
Master Automobile Technician	2012 Spring	A. Auto	6/5/2012

Certification Tests

Test	Description	Expiration Date	Status
A1	Engine Repair	6/30/2015	Current
A2	Automatic Transmission/Transaxle	6/30/2014	Current
A3	Manual Drive Train & Axles	6/30/2017	Current
A4	Suspension & Steering	6/30/2013	Current
A5	Brakes	6/30/2014	Current
A6	Electrical/Electronic Systems	6/30/2014	Current
A7	Heating & Air Conditioning	6/30/2017	Current
A8	Engine Performance	6/30/2015	Current

View Status Letter

Felix Benally
Po Box 4299
Gallup, NM 87305
ASE ID: ASE-1131-2055

Account Balance **$0.00**

Available Credits **$0.00**

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
ASEAUT05	AUTO: BRAKES	ASEAUT0541100	Pass	12/30/1999	12/31/2004	Instructor-Led
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	ASEAUT0241097	Pass	12/30/1999	12/31/2004	Instructor-Led
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	ASEAUT0241097	Pass	07/31/2000	12/31/2005	Instructor-Led
ASEAUT04	AUTO: SUSPENSION & STEERING	ASEAUT0441099	Pass	07/31/2000	12/31/2005	Instructor-Led
ASEAUT01	AUTO: ENGINE REPAIR	ASEAUT0141096	Pass	07/31/2000	12/31/2005	Instructor-Led
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	ASEAUT0341098	Pass	07/31/2000	12/31/2005	Instructor-Led
ASEAUT05	AUTO: BRAKES	ASEAUT0541100	Pass	07/31/2000	12/31/2005	Instructor-Led
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	ASEAUT0241097	Pass	11/01/2004	12/31/2009	Instructor-Led
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	ASEAUT0641101	Pass	11/01/2004	12/31/2009	Instructor-Led
ASEAUT05	AUTO: BRAKES	ASEAUT0541100	Pass	11/01/2004	12/31/2009	Instructor-Led
ASEAUT01	AUTO: ENGINE REPAIR	ASEAUT0141096	Pass	05/01/2005	06/30/2010	Instructor-Led
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	ASEAUT0341098	Pass	05/01/2005	06/30/2010	Instructor-Led
ASEAUT08	AUTO: ENGINE PERFORMANCE	ASEAUT0841103	Pass	05/01/2005	06/30/2010	Instructor-Led
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	ASEAUT0741102	Pass	11/01/2006	12/31/2011	Instructor-Led
ASEAUT04	AUTO: SUSPENSION & STEERING	ASEAUT0441099	Pass	05/01/2008	06/30/2013	Instructor-Led
ASEAUT05	AUTO: BRAKES	ASEAUT0541100	Pass	05/01/2009	06/30/2014	Instructor-Led
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	ASEAUT0241097	Pass	05/01/2009	06/30/2014	Instructor-Led
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	ASEAUT0641101	Pass	05/01/2009	06/30/2014	Instructor-Led

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
ASEAUT01	AUTO: ENGINE REPAIR	ASEAUT0141096	Pass	05/01/2010	06/30/2015	Instructor-Led
ASEAUT08	AUTO: ENGINE PERFORMANCE	ASEAUT0841103	Pass	05/01/2010	06/30/2015	Instructor-Led
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	ASEAUT0741102	Pass	04/01/2012	06/30/2017	Instructor-Led
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	ASEAUT0341098	Pass	04/01/2012	06/30/2017	Instructor-Led
ASEAUT04	AUTO: SUSPENSION & STEERING	ASEAUT0441099	Pass	01/01/2013	06/30/2018	Instructor-Led
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	ASEAUT0641101	Pass	02/13/2014	06/30/2019	Instructor-Led
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	ASEAUT0241097	Pass	02/13/2014	06/30/2019	Instructor-Led
ASEAUT05	AUTO: BRAKES	ASEAUT0541100	Pass	02/13/2014	06/30/2019	Instructor-Led
ASEAUT06	AUTO: ELECTRICAL SYSTEMS	ASEAUT0641101	Pass	01/01/2014	06/30/2019	Instructor-Led
ASEAUT05	AUTO: BRAKES	ASEAUT0541100	Pass	01/01/2014	06/30/2019	Instructor-Led
ASEAUT02	AUTO: AUTOMATIC TRANS/TRANSAXLE	ASEAUT0241097	Pass	01/01/2014	06/30/2019	Instructor-Led
ASEAUT08	AUTO: ENGINE PERFORMANCE	ASEAUT0841103	Pass	01/30/2015	06/30/2020	Instructor-Led
ASEAUT01	AUTO: ENGINE REPAIR	ASEAUT0141096	Pass	01/30/2015	06/30/2020	Instructor-Led
ASEAUT01	AUTO: ENGINE REPAIR	ASEAUT0141096	Pass	01/01/2015	06/30/2020	Instructor-Led
ASEAUT08	AUTO: ENGINE PERFORMANCE	ASEAUT0841103	Pass	01/01/2015	06/30/2020	Instructor-Led
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	ASEAUT0741102	Pass	05/23/2017	06/30/2022	Instructor-Led
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	ASEAUT0341098	Pass	05/23/2017	06/30/2022	Instructor-Led
ASEAUT03	AUTO: MANUAL DRIVETRAIN & AXLES	ASEAUT0341098	Pass	03/01/2017	06/30/2022	Instructor-Led

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
ASEAUT07	AUTO: HEATING & AIR CONDITIONING	ASEAUT0741102	Pass	03/01/2017	06/30/2022	Instructor-Led
ASEAUT04	AUTO: SUSPENSION & STEERING	ASEAUT0441099	Pass	02/28/2018	06/30/2023	Instructor-Led
ASEAUT04	AUTO: SUSPENSION & STEERING	ASEAUT0441099	Pass	01/01/2018	06/30/2023	Instructor-Led
VMVDC.M17W2	Dealer Case Management: Technical Assistance Center (TAC) Case Handling	VMVDC.M17W2 Web-based	Pass	09/18/2018		Web-based
10217.13V	10217.13V Proper Handling of Field Actions With Programming Events	10217.13V-080118-VOD	Pass	09/18/2018		Web-based
13044.19W	13044.19W Hunter GSP9700 Gen 5 Components and Operation	13044.19W95022	Pass	05/02/2018		Web-based
16044.23W4	16044.23W4 Engine Performance: Electronic Control Systems	16044.23W4-083117-WBT	Pass	05/02/2018		Web-based
14041.18W4	14041.18W4 Propshaft and Rear Axle Operation, Diagnosis and Service 4	14041.18W494987	Pass	05/02/2018		Web-based
16440.22D	16440.22D Engines: New and Updates for RPOs LV1 LFY LHN LYX L5P and LH7	16440.22D355921	Pass	04/26/2018		Online Instructor-Led
SCFGM.S18W	General Motors Dealer Safety Overview 2018	SCFGM.S18W	Pass	04/23/2018		Web-based
16060.10D	16060.10D Turbocharger Operation, Diagnosis and Service	16060.10D355818	Pass	04/10/2018		Online Instructor-Led
16048.45W	16048.45W Introduction to the Digital Storage Oscilloscope	16048.45W-091317-WBT	Pass	10/04/2017		Web-based
16043.53W4	16043.53W4 Gas / Diesel Engine Mechanical Diagnosis and Measurement 4	16043.53W492898	Pass	10/04/2017		Web-based
22048.44W	22048.44W Vehicle Rollover Protection System	22048.44W92246	Pass	08/24/2017		Web-based
ASEMASTER	ASE Master Technician	ASEMASTER43473	Pass	06/01/2017		Instructor-Led
17041.72W		17041.72W88791	Fail	04/11/2017		Web-based

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
	17041.72W 8-Speed Automatic Transmission Overview					
18420.04W5	18420.04W5 Advanced Technology Vehicle Transmission 5	18420.04W593589	Pass	04/06/2017		Web-based
18420.02W6	18420.02W6 High Voltage Energy Storage Systems 6	18420.02W693587	Pass	04/06/2017		Web-based
11044.05W3	11044.05W3 HVAC Systems and Operation Stage 3	11044.05W392965	Pass	04/05/2017		Web-based
18420.18V	18420.18V 5ET50 Transmission Unit Repair	18420.18V90980	Pass	04/05/2017		Web-based
18070.47W2	18070.47W2 eAssist Battery Storage Systems 2	18070.47W289288	Pass	04/05/2017		Web-based
18070.45W2	18070.45W2 eAssist Introduction 2	18070.45W289286	Pass	04/05/2017		Web-based
18430.05W2	18430.05W2 Battery Electric Vehicle Introduction 2	18430.05W293585	Pass	04/05/2017		Web-based
22048.42W2-R2	22048.42W2-R2 GM Safety Systems 2	22048.42W2-R294728	Pass	03/30/2017		Web-based
22048.42W3-R3	22048.42W3-R3 GM Safety Systems 3	22048.42W3-R394307	Pass	03/30/2017		Web-based
22048.42W1-R2	22048.42W1-R2 GM Safety Systems 1	22048.42W1-R294726	Pass	03/30/2017		Web-based
16440.18D-V	16440.18D-V Engines: New and Updates for RPOs LT1, LV3, LUZ, LKW, LF3, L83, L86	16440.18D-V82791	Pass	02/14/2017		Web-based
13042.14WP	Noise, Vibration and Harshness (NVH)	13042.14WP88774	Fail	02/09/2017		Online Test
16040.31W	16040.31W 12V Stop / Start System 2	16040.31W92782	Pass	02/09/2017		Web-based
13042.14W	13042.14W Noise, Vibration and Harshness (NVH)	13042.14W88741	Pass	02/09/2017		Web-based
18044.40W	18044.40W Vehicle Network Security	18044.40W92292	Pass	02/09/2017		Web-based
15045.18W6	15045.18W6 GM Braking Systems 6	15045.18W692935	Pass	02/09/2017		Web-based
10216.14V		10216.14V93348	Pass	01/16/2017		Web-based

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
	10216.14V Service Programming System Update					
18044.23V	18044.23V Data Communication System Diagnostics Overview	18044.23V90754	Pass	01/16/2017		Web-based
13042.14D2-R2	13042.14D2-R2 Noise, Vibration and Harshness (NVH) 2	13042.14D2-R292149	Pass	01/11/2017		Online Instructor-Led
16440.21D	16440.21D Engines: New and Updates for RPOs L5P, LH7 and LGZ	16440.21D93137	Pass	01/09/2017		Online Instructor-Led
16043.53D	16043.53D Gas/Diesel Engine Mechanical Diagnosis and Measurement	16043.53D91604	Pass	01/04/2017		Online Instructor-Led
16410.10W	16410.10W 2.8L Duramax Engine	16410.10W88790	Pass	01/02/2017		Web-based
14043.25D	14043.25D Truck 4WD/AWD Operation, Diagnosis, and Service	14043.25D55948	Pass	11/18/2016		Online Instructor-Led
18420.17W	18420.17W High Voltage Depower Tool Usage	18420.17W90917	Pass	11/16/2016		Web-based
18420.02W5	18420.02W5 High Voltage Energy Storage System 5	18420.02W592272	Pass	11/16/2016		Web-based
18420.04W4	18420.04W4 Advanced Technology Vehicle Transmission 4	18420.04W492283	Pass	11/16/2016		Web-based
11044.05H-R2	11044.05H-R2 HVAC Systems & Operation	11044.05H-R293616	Pass	11/10/2016		Historical Credit - DNU
18420.04W3	18420.04W3 Advanced Technology Vehicle Transmission 3	18420.04W387961	Pass	11/10/2016		Web-based
18450.00W	18450.00W Hybrid Electric Vehicle Introduction	18450.00W92276	Pass	11/10/2016		Web-based
18420.02W4	18420.02W4 High Voltage Energy Storage Systems 4	18420.02W487959	Pass	11/10/2016		Web-based
18420.01W2	18420.01W2 EREV Introduction and Safety 2	18420.01W287957	Pass	11/09/2016		Web-based
14043.17D		14043.17D55213	Pass	10/27/2016		

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
	14043.17D Passenger Car All-Wheel Drive					Online Instructor-Led
16048.36W-R2	16048.36W-R2 Data Bus Diagnostic Tool	16048.36W-R293569	Pass	10/19/2016		Web-based
17041.58W1	17041.58W1 Automatic Transmission Diagnosis and Service 1	17041.58W193573	Pass	10/15/2016		Web-based
17041.58W3	17041.58W3 Automatic Transmission Diagnosis and Service 3	17041.58W393575	Pass	10/14/2016		Web-based
17041.58W2	17041.58W2 Automatic Transmission Diagnosis and Service 2	17041.58W293574	Pass	10/14/2016		Web-based
19047.20W2-R5	19047.20W2-R5 Entertainment Systems 2	19047.20W2-R591571	Pass	10/14/2016		Web-based
19047.20W3-R3	19047.20W3-R3 Entertainment Systems 3	19047.20W3-R392247	Pass	10/14/2016		Web-based
15045.18H-R2	15045.18H-R2 GM Braking Systems	15045.18H-R2-WTLT	Pass	10/05/2016		Instructor-Led
13042.12WP	Noise, Vibration and Harshness (NVH)	13042.12WP73753	Fail	09/26/2016		Online Test
13042.12W	Noise, Vibration and Harshness (NVH)	13042.12W49575	Fail	09/26/2016		Web-based
16410.01D2	16410.01D2 Diesel Engine Performance 2	16410.01D291939	Pass	09/22/2016		Online Instructor-Led
16410.01D1	16410.01D1 Diesel Engine Performance 1	16410.01D191913	Pass	09/22/2016		Online Instructor-Led
11044.05W2-R2	11044.05W2-R2 HVAC Systems and Operation Stage 2	11044.05W2-R292962	Pass	08/13/2016		Web-based
16043.53W3	16043.53W3 Gas/Diesel Engine Mechanical Diagnosis and Measurement 3	16043.53W392903	Pass	07/26/2016		Web-based
16048.33H	16048.33H GDS2 / MDI 1 & 2	16048.33H-WTLT	Pass	06/17/2016		Instructor-Led
13042.14H-R2			Pass	06/08/2016		

Course History

Name: FELIX BENALLY

Organization: AMIGO CHEVROLET

COURSE NUMBER	COURSE NAME	CLASS CODE	GRADE	COMPLETED	EXPIRES	DELIVERY METHOD
	13042.14H-R2 Noise, Vibration and Harshness	13042.14H-R2-WTLT				Instructor-Led
13042.14D1-R2	13042.14D1-R2 Noise, Vibration and Harshness (NVH) 1	13042.14D1-R2351122	Pass	06/01/2016		Online Instructor-Led

1C-Abel Johnson CV

Abel Johnson

P.O. Box 2394
Gallup, New Mexico 87305
(505) 879-3183

Objective

To utilize my experience and education in the Automotive Technology field within an educational institution or company.

Employment

SR. AUTOMOTIVE TECHNICIAN — **MAY 2010 – PRESENT**
Navajo Nation Fleet Management — *Window Rock, AZ*

Diagnose engine noise and repair; diagnose transmission, repair or overhaul; diagnose and repair cooling systems; check and diagnose engines, transmissions, axle leaks, repair drive lines, overhaul front and rear wheel drive axles, overhaul all wheel and four wheel drive transfer cases, pull engines/transmissions, oil changes, brakes, pre-delivery inspections, electrical diagnosis, tune-ups, clutches, heating & air conditioning (service 134A system) and cooling system. Perform drivability work and engine performance. Work with scanners and Mitchell-on- Demand Technical Assistance.

HEAVY LINE TECHNICIAN — **OCTOBER 1992 – MARCH 2010**
Amigo Chevrolet — *Gallup, NM*

Diagnose engine noise and repair; diagnose transmission, repair or overhaul; diagnose and repair cooling systems; check and diagnose engines, transmissions, axle leaks, repair drive lines, overhaul front and rear wheel drive axles, overhaul all wheel and four wheel drive transfer cases, pull engines/transmissions, oil changes, brakes, pre-delivery inspections, electrical diagnosis, tune-ups, clutches, heating & air conditioning, cooling system and install A/C system in Toyota. Service 134A and R12 systems. Work with scanners and GM Technical Assistance (via telephone). Supervise two Tech Assistants.

TECHNICIAN — **OCTOBER 2007 – JANUARY 2009**
Pep Boys — *Gallup, NM*

Diagnose engine noise and repair; diagnose transmission, repair or overhaul; diagnose and repair cooling systems; check and diagnose engines, transmissions, axle leaks, repair drive lines, overhaul front and rear wheel drive axles, overhaul all wheel and four wheel drive transfer cases, pull engines/transmissions, oil changes, brakes, electrical diagnosis, tune-ups, clutches, heating & air conditioning and cooling systems.

PART-TIME LECTURER

JANUARY 2013 – PRESENT
AUGUST 2012 – DECEMBER 2012
JANUARY 2012 – MAY 2012
AUGUST 2011 – DECEMBER 2011
AUGUST 2009 – MAY 2010
AUGUST 2009 – DECEMBER 2009
AUGUST 2008 – DECEMBER 2008
AUGUST 2003 – MAY 2004
JANUARY 1995 – DECEMBER 1995

Manual Drive Train and Axles (A3)	*Expires 06/30/2019*
Steering & Suspension (A4)	*Expired 12/31/2012*
Brakes (A5)	*Expires 06/30/2019*
Electrical/Electronic Systems (A6)	*Expires 06/30/2019*
Heating and Air Conditioning (A7)	*Expired 06/30/2019*
Engine Performance (A8)	*Expires 06/30/2019*

GM COMPUTER-BASED TRAINING

- *Fundamentals*
- *Engine Performance*
- *Diesel Engine Performance*
- *Engine Repair*
- *Electrical / Electronics*
- *Manual Drive Train & Axle*
- *Automatic Transaxle / Transmission*
- *Steering & Suspension*
- *Brakes*

References

Doug Cobb
D & A Body Shop, Owner
505-863-2900

Alvin Begay
Service Writer/Advisor, Navajo Nation Fleet Management-Window Rock
928-871-6527

Rudy Porter
Service Advisor/Asst Manager, Amigo Chevrolet
505-722-7701

Universal Technical Institute

Phoenix Arizona

This Diploma is presented to

ABLE B. JOHNSON

who satisfactorily completed the following program

Automotive/Diesel Technology

and in recognition of this achievement is entitled to this

Associate Of Occupational Studies Degree

Specialty courses of training include:

Automotive Engine Fundamentals	Automotive Chassis and Brakes	Truck Automatic Transmissions	Hydraulic Systems
Electronic Fundamentals	Automotive Power Trains	Diesel Engines	Truck Power Trains
Automotive Fuel & Ignition Systems	Automotive Climate Control	Diesel Fuel Systems	Transport Refrigeration
Automotive Driveability & Emissions	Truck Brakes and Chassis	Diesel Engine Accessories	Electronic Technology

In witness whereof, we have hereunto subscribed our signatures

at Phoenix, Arizona, this 21ST day of JULY 1989

Director

Director of Training

302

Certificate of Recognition

for

Outstanding Performance as Faculty
Automotive Technology

This certificate has been awarded to

Abel Johnson

Given this *17th* day of *May*, 20*17*.

In recognition of outstanding service to
Students, Staff, and Faculty in the UNM-Gallup Automotive Technology Program

Frank Tovera

Ernesto Watchman

LITHO IN U.S.A.

als

Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE
Address:	1900 S SECOND ST
City:	GALLUP
State:	NM
Zip:	87301
Report Date:	Jan 31 2004 4:08AM
Dealership Group:	C
Num Technicians:	17
Division/Product:	C,K

		Training Courses					Future Requirements
		18043.01-R2 Electrical/Electronics Stage 1 (W)	18043.02-R2 Electrical/Electronics Stage 2 (W)	18043.03-R2 Electrical/Electronics Stage 3 (W) #	10041.00 S Overview (W)	10048.15 Tech 2 Familiarization (W) #	18043.04 Electrical/Electronics Terminals and Connectors (H)
GM Master Technician Certification Courses		*	*	*	*	*	
Technician Name	ID#						
[redacted]		2	2	2	2	2	
					C		
		C			C		
		C				C	
		C	C	C	C	C	
		C	C	C	C	C	
JOHNSON, A	9972				C		
[redacted]		C	C	C	C	C	
		C	C	C			
						C	
		C	C	C	C	C	
					C		
		C	C	C	C	C	
		C	C	C	C	C	
		C					
Percent Minimum Training Requirement Completed		49%					
Number Technicians GM Master Technician Certified					0		

= Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Diesel Engine Performance

Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE
Address:	1900 S SECOND ST
City:	GALLUP
State:	NM
Zip:	87301
Report Date:	Jan 31 2004 4:08AM
Dealership Group:	C
Num Technicians:	17
Division/Product:	C,K

		Training Courses						
		Number of Fundamental Courses Completed	10640.02 OBD II (M-R2)	10640.21 Diesel Engine Perf. 2001(W,D,H)	10640.10 6.6L Diesel Engine (W)	% Training Complete per Technician	10640.10A Certification Assessment	GM Master Technician Certified
	GM Master Technician Certification Courses	*	*	*	*		*	
Technician Name	ID#		1	1	1			
[redacted]		1/5				12%		
		2/5				25%		
		2/5		1/3		29%		
		C		1/3		66%		
						0%		
		C				62%		
		1/5				12%		
JOHNSON, A	0972	C	C	1/3	C	91%		
[redacted]		3/5				37%		
						0%		
		1/5				12%		
		C	C	2/3	C	95%		
		1/5				12%		
		C	C	2/3	C	95%		
		C				62%		
						0%		
		1/5	C			25%		
Percent Minimum Training Requirement Completed		95%						
Number Technicians GM Master Technician Certified								0

\# = Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Electrical/Electronics

Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE
Address:	1900 S SECOND ST
City:	GALLUP
State:	NM
Zip:	87301
Report Date:	Jan 31 2004 4:06AM
Dealership Group:	C
Num Technicians:	17
Division/Product:	C,K

		Training Courses													Future Requirements	
		Number of Fundamental Courses Completed	ASE Certification (AD)	OR ASE Certification (TD)	OR 16041.01 Battery, Charging, and Starting (M-R2)	16044.10 Body Control Systems (M,D1,D2,H)	22040.30 GM Supplemental Restraint Systems (M,H)	19047.06 Security Systems (M-R2)	19047.03 Entertainment Systems (M1,M2,M3,H)	19040.20 OnStar Gen 2, 3 & 4 Diag & Repair (D1, D2)	OR 19040.30 OnStar System Diag & Repair (D1, D2)	% Training Complete per Technician	18640.00A Certification Assessment	GM Master Technician Certified	16040.20 GMLAN/Best Architecture and Function Diagnostics (D)	16043.04 Electrical/Electronics Terminals and Connectors (H)
	GM Master Technician Certification Courses	*	*	*	*	*	*	*	*	*	*		*			
Technician Name	ID#		2	2	2	2	2	2	2	2	2					
[redacted]		1/5										8%				
		2/5										16%				
		2/5										16%				
		C										41%				
												0%				
		C										41%				
		1/5										8%				
JOHNSON, A	9972	C	05			1/4						52%				
[redacted]		3/5										25%				
												0%				
		1/5										8%				
		C	04		C	3/4	C	C	1/4	C		91%				
		1/5										8%				
		C	05		C	3/4	C	C	3/4	1/2		91%				
		C										41%				
												0%				
		1/5	08		C							25%				
Percent Minimum Training Requirement Completed		91%														
Number Technicians GM Master Technician Certified														0		

= Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Automatic Transaxle/Transmission

Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE
Address:	1900 S SECOND ST
City:	GALLUP
State:	NM
Zip:	87301
Report Date:	Jan 31 2004 4:06AM
Dealership Group:	C
Num Technicians:	17
Division/Product:	C,K

Technician Name	ID#	Number of Fundamental Courses Completed	ASE Certification (A2)	15040.02 OBD II (M-R2)	17041.20 Auto Trans Transaxle Diag (M-R2,D1,D2,H)	15044.11 GM Powertrain Performance (M1,M2,M3)	14043.11 Four Wheel Drive Systems (M)	13042.10 Vibration Correction (M-R2)	17041.27 4L80-E Auto Transmission (M)	OR	17041.32 4T65-E Auto Transaxle (M)	OR	17041.28 4T40-E Auto Transaxle (M)	17041.29 4L80-E Auto Transmission (M)	17041.30 4T80-E Transaxle (M)	17340.10 Allison LCT 1000 Trans Part 1 (V)	17340.11 Allison LCT 1000 Trans Part 2 (V)	17340.12 Allison LCT 1000 Trans Diag. Issues & Proc (D)	17340.13 Allison LCT 1000 Trans Diag. Class Up (D)	% Training Complete per Technician
	GM Master Technician Certification Courses	*	*	*	*	*	*	*	*		*									
			1	1	1	1	1	1	1		1		1	1	1	1	1	1	1	
[redacted]		1/5																		5%
		2/5																		10%
		2/5	08		C		C	C						C		C			C	47%
		C	04		3/4		C	C	C											51%
																				0%
		C			C			C						C						42%
		1/5																		5%
JOHNSON, A	9972	C	08	C	3/4	1/3	C	C	C		C		C	C	C	C			C	84%
[redacted]		3/5					C							C						26%
																				0%
		1/5			2/4											C			C	16%
		C		C	C	C								C						47%
		1/5																		5%
		C		C	C	C		C												47%
		C						C												31%
																				0%
		1/5		C																10%
Percent Minimum Training Requirement Completed		84%																		
Number Technicians GM Master Technician Certified																				

Training Courses

= Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Steering & Suspension

		Number of Fundamental Courses Completed	OR ASE Certification (A4)	OR ASE Certification (T6)	16046.10 Found Brakes/ABS Sys (W-R2)	13041.10 Steering Service (W)	13044.10 Electronic Suspension Systems (W,H)	13042.10 Vibration Correction (W-R2,D1,D2,H)	13041.20 Rear Wheel Steering (Quadrasteer) (D)	% Training Complete per Technician	13640.00A Certification Assessment	GM Master Technician Certified
Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE											
Address:	1980 S SECOND ST											
City:	GALLUP											
State:	NM											
Zip:	87301											
Report Date:	Jan 31 2004 4:06AM											
Dealership Group:	C											
Num Technicians:	17											
Division/Product:	C,K											
	GM Master Technician Certification Courses	•	•	•	•	•	•	•			•	
Technician Name	ID#		1	1	1	1	1	1	1			
[redacted]	[redacted]	1/5								9%		
[redacted]	[redacted]	2/5								18%		
[redacted]	[redacted]	2/5						C		27%		
[redacted]	[redacted]	C	05					3/4		61%		
[redacted]	[redacted]									0%		
[redacted]	[redacted]	C	04		C	C	1/2	2/4	C	90%		
[redacted]	[redacted]	1/5								9%		
JOHNSON, A	9972	C	05					C		63%		
[redacted]	[redacted]	3/5								27%		
[redacted]	[redacted]									0%		
[redacted]	[redacted]	1/5								9%		
[redacted]	[redacted]	C								45%		
[redacted]	[redacted]	1/5								9%		
[redacted]	[redacted]	C			C	C		C		72%		
[redacted]	[redacted]	C	08		C	C	1/2	C	C	95%		
[redacted]	[redacted]									0%		
[redacted]	[redacted]	1/5								9%		
Percent Minimum Training Requirement Completed		95%										
Number Technicians GM Master Technician Certified												0

= Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Mech/Elec/Body Repair

Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE
Address:	1900 S SECOND ST
City:	GALLUP
State:	NM
Zip:	87301
Report Date:	Jan 31 2004 4:06AM
Dealership Group:	C
Num Technicians:	17
Division/Product:	C,K

Technician Name	ID#	Number of Fundamental Courses Completed	ASE Certification (B6)	OR ASE Certified Master Automobile Technician	11044.00 Intro to Air Conditioning (W-R2, D1, D2)	22048.30 GM Supplemental Restraint Systems (W,H)	15045.10 Foundation Brakes/ABS Sys (W-R2,D1,D2)	22249.50 Waterleak and Windnoise Rep (W,H)	12340.20 2003 Chevrolet SSR Refmd. Road Oper & Service Proc. (D)	% Training Complete per Technician	22841.00A Certification Assessment	GM Master Technician Certified
	GM Master Technician Certification Courses	•	•	•	•	•	•	•	•		•	
Technician Name	ID#		1	1	1	1	1	1	1			
[redacted]		1/5								9%		
[redacted]		2/5	08							27%		
[redacted]		2/5		3/8						21%		
[redacted]		C		5/8	2/3					57%		
[redacted]								C		9%		
[redacted]		C		2/8			C			58%		
[redacted]		1/5								9%		
JOHNSON, A	9972	C		08	C					63%		
[redacted]		3/5								27%		
[redacted]										0%		
[redacted]		1/5								9%		
[redacted]		C		4/8	C	C				68%		
[redacted]		1/5	08					C		27%		
[redacted]		C		4/8	C	C	C			77%		
[redacted]		C		2/8			C			58%		
[redacted]										0%		
[redacted]	4	1/5		4/8						13%		
Percent Minimum Training Requirement Completed		77%										
Number Technicians GM Master Technician Certified												0

= Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Paint

Dealership Name:	AMIGO CHEVROLET, CADILLAC, OLDSMOBILE	
Address:	1900 S SECOND ST	
City:	GALLUP	
State:	NM	
Zip:	87301	
Report Date:	Jan 31 2004 4:06AM	
Dealership Group:	C	
Num Technicians:	17	
Division/Product:	C,K	

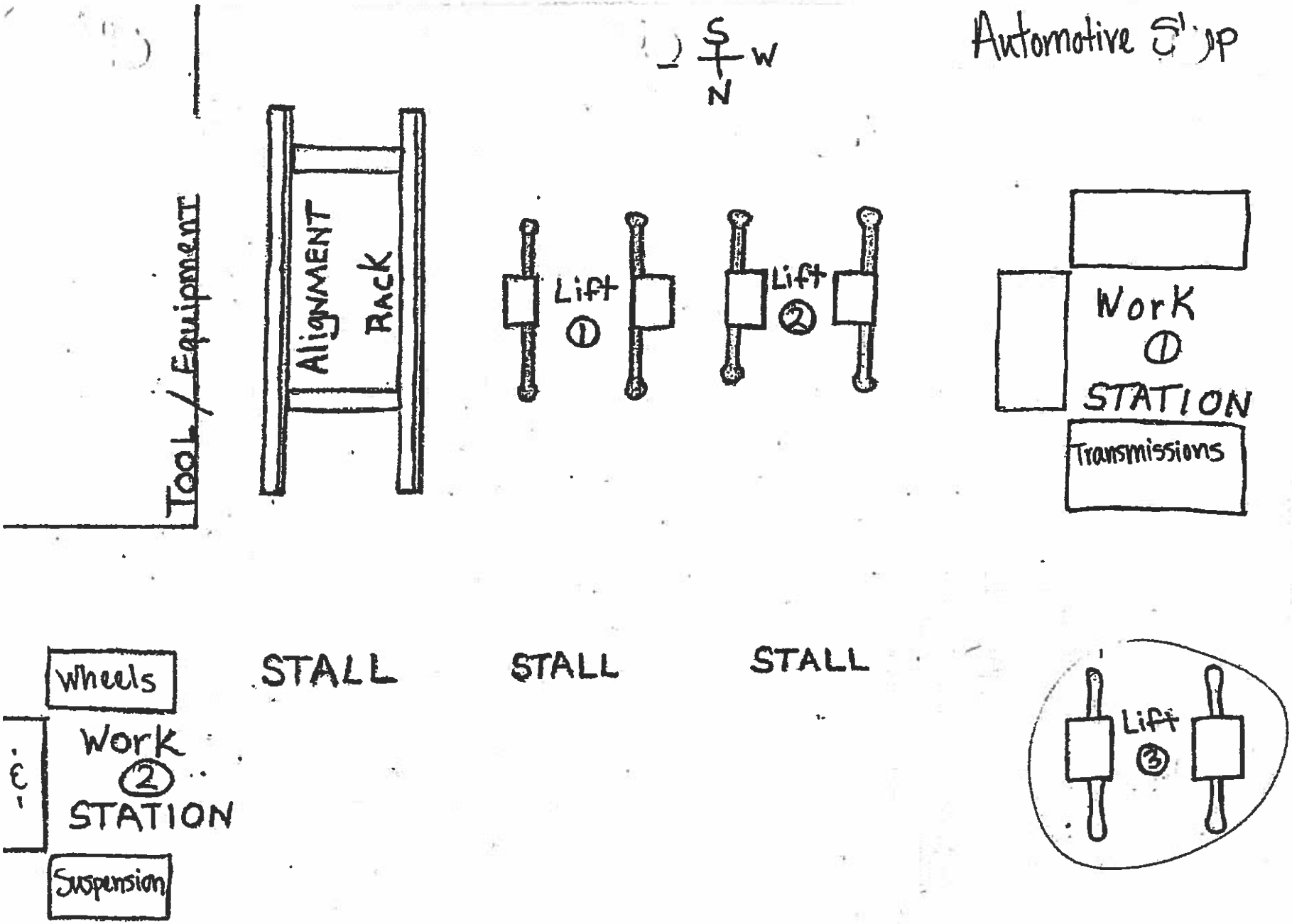
			Training Courses			
			ASE Certification (B2) - Not Required but credit awarded	22041.00 Paint Course (H)	% Training Complete per Technician	GM Master Technician Certified
		GM Master Technician Certification Courses				
Technician Name	ID#		1	1		
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
JOHNSON, A	8972				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]			05	100%	Y
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
[redacted]	[redacted]				0%	
Percent Minimum Training Requirement Completed			100%			
Number Technicians GM Master Technician Certified						1

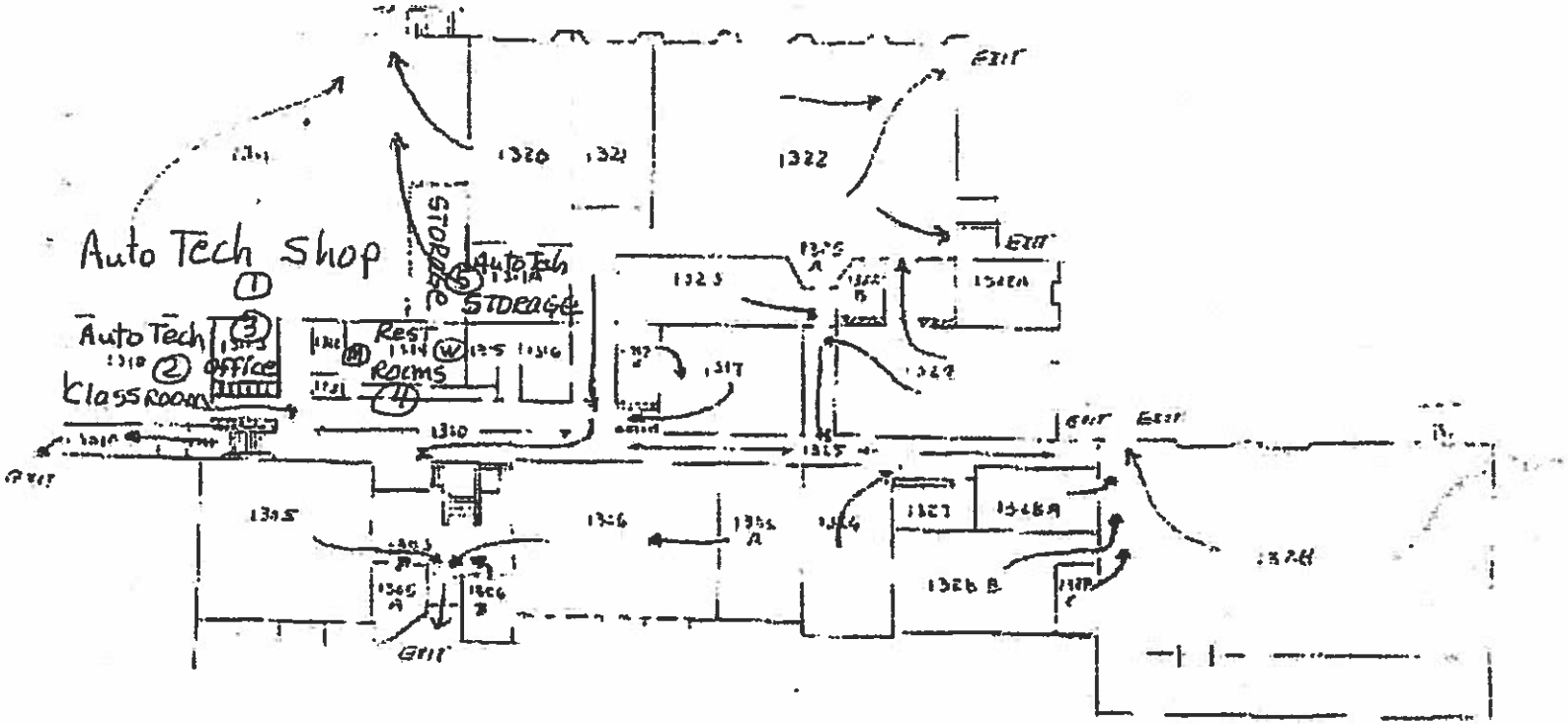
= Not required for Body Structural Repair Area
* denotes a sublet/shared relationship

Close Window

2A-Shop Layout

Automotive Shop





1 - Shop
2 - Classroom
3 - Office
4 - Restrooms
5 - Storage

Career Education

2B-Tools/Equipment

12" Half Round 12" Round 6" and 12" Flare Nut (tubing) Wrenches: 3/8" - 3/4" 10mm - 17mm Flashlight Fuse Puller Fused Jumper Wire Set (with various adapters) Hack Saw Hammers: 16 oz. Ball Peen Brass Dead Blow Plastic Mallet Plastic Tip Rubber Mallet Inspection Mirror Magnetic Pickup Tool Pliers: Combination 6" Hose Clamp
3
Locking Jaw Needle Nose 6" Side Cutting Slip Joint (Water Pump) Pry Bars: Rolling Head Straight Punches: Center Brass Drift Pin 1/8", 3/16", 1/4", 5/16 " Taper 3/8", 1/2", 5/8" Safety Glasses (meeting OSHA requirements) Scraper: Carbon 1" Gasket 1" Screwdriver - Blade Type: Stubby 6", 9", 12" Offset Screwdriver - Phillips: Stubby #1, #2 6" #1, #2 12" #3 Offset #2 Screwdriver - Impact Driver Set Screw Starter: Phillips Standard Socket Set - 1/4" Drive: 1/4" - 1/2" Standard Depth 1/4" - 1/2" Deep 6mm - 12mm Standard Depth 6mm - 12mm Deep Flex/Universal Type 3", 6" Extensions Ratchet Socket Set - 3/8" Drive: 5/16" - 3/4" Standard Depth (6 point) 3/8" - 3/4" Deep (6 point) 10mm - 19mm Standard Depth 10mm - 19mm Deep 3", 5", 10" Extensions Flexhead Ratchet Ratchet Spark Plug Sockets 5/8", 13/16" Speed Handle Universal Joint
4 7/1/2013
Flexible Socket Set 3/8" - 3/4" Flexible Socket Set 10mm - 19mm Socket Set - 1/2" Drive: 7/16" - 1 1/8" Standard Depth 7/16" - 1 1/8" Deep 10mm - 24mm Standard Depth 10mm - 24mm Deep 3", 6", 12" Extensions Flex Handle (Breaker Bar) Ratchet Spark Plug Feeler Gauge (Gap Tool) Tape Measure – Standard and Metric Test Light (12V and self-powered) Tire Pressure Gauge Tire Tread Depth Gauge Torque Wrench: 3/8" Drive (10 - 250 lb. in.) 3/8" Drive (5 - 75 lb. ft.) 1/2" Drive (50 - 250 lb. ft.) Torx® Set (screwdrivers and/or sockets): T-8 to T-60 Wire Brush

GENERAL LAB/SHOP EQUIPMENT

The tools and equipment on this list are used in general lab/shop work but are not generally considered to be individually owned hand tools. A well-equipped, accredited program should have all of these general tools and equipment readily available and in sufficient quantity to provide quality instruction.

Air Chisel Set (various bits) Air Compressor and Hoses Air Pressure Regulator Air Ratchet (3/8" drive) Automotive Stethoscope (electronic recommended) Axle Stands (Jack Stands) Axle Support Stands (Screw Jacks) Battery Charger Battery/Starter/Charging System Tester Bearing Packer (hand operated) Belt Tension Gauge Bench or Pedestal Grinder Coolant/Combustion Gas Detector (recommended) Coolant Tester Cooling System Pressure Tester and Adapters Creeper Cylinder Leakage Tester Dial Indicator with Flex Arm and Clamp Base Digital Multimeter (DMM) with various lead sets (sufficient quantities to meet instruction goals) Drain Pans Drill - 3/8" variable speed, reversible Drill - 1/2" variable speed, reversible Electric Heat Gun Engine Coolant Recovery Equipment or Recycler or Coolant Disposal Contract Service Extension Cords Face Shields Fender Covers Floor Jack (1½ Ton Minimum) Hand Held Vacuum Pump Hoist(s) Hood Prop Hydraulic Press with adapters Impact Socket Sets - 3/8" Drive (Standard and Metric) Impact Sockets - 1/2" Drive (7/16" - 1 1/8") Impact Sockets - 1/2" Drive (12mm – 24mm) Impact Sockets – 1/2" Drive Deep (30 mm, 32 mm, 36mm) Impact Wrench - 1/2" Drive Impact Wrench

* Also necessary to accomplish tasks in other MAST categories (Brakes and Electrical/Electronic Systems)

AUTOMATIC TRANSMISSION/TRANSAXLE Differential Set-up Tools Hydraulic Pressure Gauge Set Transmission Jack(s) Transmission/Transaxle Flushing Equipment (recommended) Transmission/Transaxle Removal and Installation Equipment Transmission/Transaxle Holding Fixtures Transmission/Transaxle Special Tool Sets (appropriate for units being utilized)

ELECTRICAL/ELECTRONIC SYSTEMS Connector Pick Tool Set Door Panel Trim Tool(s) Headlight Aimer or Screen Heat Gun (or equivalent for heat shrinking operations) Terminal Tension (Pin Drag) Test Kit/Terminal Probe Kit (or equivalent) Wire and Terminal Repair Kit

MANUAL DRIVE TRAIN AND AXLES Axle Nut Socket Set (or equivalent) Clutch Alignment Set Clutch Pilot Bearing/Bushing Puller/Installer Constant Velocity Joint (CV) Service Tools: Boot Installation Tool Boot Clamp Pliers or Crimping Ring Front Wheel Drive Engine Support Fixture Rotating Torque Wrench (beam-type or equivalent) Special Tools for Transmissions/Transaxles (appropriate for units being taught) Spindle Rethreader Die Set Universal Joint Tools

ENGINE REPAIR Ball (Small Hole) Gauges Cam Bearing Driver Set (suggested) Camshaft Holding Tool (appropriate for units being taught) Cylinder Deglazer Dial Bore Indicator Antifreeze/Coolant Tester Engine Stands/Benches Inside Micrometer Set: 0 - 6" 0 - 125mm Oil Pressure Gauge Outside Micrometer Set: 0 - 6" 0 - 125mm Portable Crane - 1/2 Ton Ring Compressor Ring Expander Ring Groove Cleaner Precision Straight Edge Telescopic Gauge Set Torque Angle Gauge V-Blocks Valve Spring Compressor Valve Spring Tester

3A-Strategic Action Plan

UNM GALLUP

Automotive Technology Department Action Plan

Department: Business and Applied Science

Prepared by: Ernesto Watchman

MISSION STATEMENT

The UNM-Gallup Automotive Technology Program mission is to provide an environment with the purpose of developing automotive technology student skills with absolute dedication to their dreams, passions, and growth. Instructors will work to develop or improve the training structure that an automotive technician needs to meet the ever-changing demands of the industry.

VISION STATEMENT

The UNM-Gallup Automotive Technology Program strives to be a thriving center of integrity and collaborative excellence in Automotive Performance, Training and Education rooted in Modern Vehicle applications.

PURPOSE STATEMENT

1. To provide a place for anyone, regardless of age or gender, to pursue their goal in Automotive Technology.
2. The UNM-Gallup Automotive Technology Center shall be a place for individuals to learn about the fundamentals and theories of automotive applications through lectures and performance diagnostics, maintenance, repairs, and addresses other vehicle performance issues, and to enhance students skills so they can perform at a professional level.

Description and Goals

The University of New Mexico-Gallup Automotive Program trains college and CCTE students through coursework in automotive technology. The courses offers instruction in Automotive Testing and Diagnosis, Brake Systems, Electrical System Repairs, Steering and Suspension, Emission Controls Service, Heating and Air Conditioning, Automotive Engine Overhaul, Drive Train Overhaul, Automatic Transmission Overhaul, Electrical System Overhaul, Practicum in Automotive Technology, Maintenance and Light Repair, and Cooperative Education.
The University of New Mexico-Gallup Branch Automotive Department continues to offer excellent instruction in past, current, and trending automotive repair and maintenance practices. Our commitment to student success comes with community Partnerships investing in the success of the program. Automotive Service Excellence (ASE) certified faculty guide students through the learning process in the automotive field of analytic and strategic

Suspension and Steering. To become certified, technicians must have at least 2 years of shop experience (or relevant schooling and 1 year of shop experience) and pass an exam.

Also, we must progress and improve the areas of teaching methods and equipment to stay up to date with other institutions and stay current with the ever-changing automotive industry. Instructors must also keep up to date with Industry standards in Automotive Service Excellence (ASE) certifications.

Automotive Technology faculty, UNM students, automotive club members, UNM student representatives, and UNM academic advisors assist in recruitment by on site school visits to promote and advertise the Auto Technology Program. In order for the UNM-Gallup Automotive Technology Program to reach its goal, it needs additional resources, such as, additional fulltime faculty, state of the art equipment, expanded Auto tech Lab area and classroom, increased budget, and curriculum change to bring each objective to fruition.

Action Steps to Achieve Goals: Establish a High Quality and Deliverable Curriculum and Program

- **Recap of Objectives:**
  a) NATEF Certification
  b) Curriculum Change
  c) Advisory Board Committee.
  d) Two Full Time Faculty Positions
  e) State of The Art Equipment
  f) Budget Increase
  g) Space Increase

Actions Step a): NATEF Certification

Achieving NATEF certification is a priority to the Automotive Technology Program here at the University of New Mexico Gallup campus. In order to improve student skill in ASE task related curricula, students' need to train diligently in all eight areas of ASE (classroom lecture, shop performance), and be knowledgeable in those areas upon graduating from the UNM-Gallup Automotive Technology Program Certificate or Associate Degree.

NATEF is as defined:

- The National Automotive Technicians Education Foundation (NATEF) is to improve the quality of automotive technician training programs nationwide at secondary and post-

UNM GALLUP

Benefits of Accreditation:

Accreditation of an automotive training program brings with it program credibility, prestige, recognition, and overall program improvement. By ensuring training programs meet the highest standards, NATEF accreditation benefits everyone from schools, students and future employers, to the automotive service industry and everyone driving on our nation's roads.

School Benefits:

Increases potential for funding from public and corporate sources

Identifies program excellence to draw more students to the school

Student Benefits:

Provides a way for students to identify quality schools and programs

Provides assurance of a higher quality education

Increases potential to secure a solid career after graduation

Employer Benefits:

Ensures a pool of highly trained entry-level technicians

Connects employers with schools who have quality graduates

Automotive Service Industry Benefits:

Encourages more respect for automotive service professions

Increases the level of professionalism in the industry

(Information extracted from NATEF website at www.natef.org)

Requirement for achieving certification can be very tedious but are attainable. An application for NATEF can be submitted for 3 different levels of accreditation: Maintenance and light repair (MLR), Automotive Service Technology (AST), and Master Automotive Service Technology (MAST). Programs applying for accreditation must also meet the following hour requirements based on level of accreditation sought: MLR-540 combined classroom and shop activities hours, AST-840 combined classroom and shop activities hours and MAST-1200 combined classroom and shop activities hours. The current UNM-Gallup Automotive Technology curriculum and

UNM GALLUP

An advisory committee must continue consisting of minimum five members. This committee is broadly based on former students, current UNM-Gallup automotive full-time and adjunct faculty, employed technicians, service managers and representatives for consumer interests. The advisory committee must convene at least two working meetings a year to provide information, counsel and recommendations on behalf of the Gallup community served by the training program.

The UNM-Gallup auto technology program hosted an advisory committee meeting twice in the academic year of 2016-2017. The committee provided input, recommendations, suggestions concerning the auto technology program and reviewed budget funds. The advisory committee will continue to provide guidance and also help approve all tasks added to the mandatory NATEF task list required for the accreditation this program seeks. To host an advisory meeting, the UNM-Gallup automotive technology department provides lunch for its committee members as a gesture of appreciation for their time and also provides documentation concerning the state of the automotive technology program as a work in progress.

The Automotive Technology program will share the standards its meeting with potential student employers and program partners and sponsors.

Actions Step d): Additional Full time Faculty

- Visiting Full Time Lecturer Must be hired as a Full Time Automotive Technology Faculty
- Hire Second Full Time Faculty for the Automotive Technology Program
- Hire Certified Automotive Technology Professional

Create a hiring plan requesting additional faculty line for an Assistant Professor of the Automotive Technology program. The commitment to the CCTE program requires a second full time faculty member. The Advisory Committee will assist in this process by recommending a possible candidate. All instructors will be expected to maintain or reach certain requirements for NATEF certification. The final approval will be determined by the hiring committee and dean of school. The successful candidate should be equipped to lead the program, manage and create curriculum, and help to establish the brand. The individual will also be able to teach classes in class lectures and shop demonstrations. The second candidate should have industry certifications and must be up to date with all certifications. Furthermore, once hired this faculty will manage the college program and become a representative for the UNM-Gallup Automotive Technology program for recruitment. Hiring an additional full time faculty will be very beneficial to the UNM-Gallup Automotive Program as the candidate will continue to help promote and build the auto technology program.

UNM GALLUP

- We are working with local high schools to create an on-site dual credit program to help recruit and retain future students at a secondary level.
- We are taking measures to apply for NATEF accreditations to certify the UNM-Gallup Automotive program.
- We have improved our curriculum and teaching methods to deliver a more meaningful program for the students.

However, this work is exhausting for one faculty member to manage.

- UNM-Gallup received relatively stable state funding but continued to struggle as State appropriations have declined while student tuition continued to increase as evident in the last 6 years.
- Space is not sufficient to accommodate two separate programs, CCTE and College curricula.
- Technology in the classroom and in the lab area need upgrading due to out dated software and equipment.

Upgrading classroom and shop/lab may require UNM master plan facility department involvement.

UNM-Gallup also will have to provide travel and training opportunities for UNM-Gallup faculty and staff to remain at the forefront of national trends.

Approximate costs are as follows:

Planning/remodeling and Designing-	$40,000 estimate
Additional Faculty-	$55,000 direct salary (reoccurring)
New Equipment lab/classroom-	$150,000
Remaining operational costs-	$12,000

Actions Step g): Space increase

An additional classroom is required that includes the technology to deliver streaming lessons.

The lab shop also requires additional service bays to expand instructional delivery to accommodate both CCTE and College content.

It should also contain a larger classroom that can accommodate 20-25 students. The addition of faculty members also requires additional office space.

represents about 320 hours per semester. The instructor will conduct and end-of-year evaluation of each student to determine if he/she advances to next level of training.

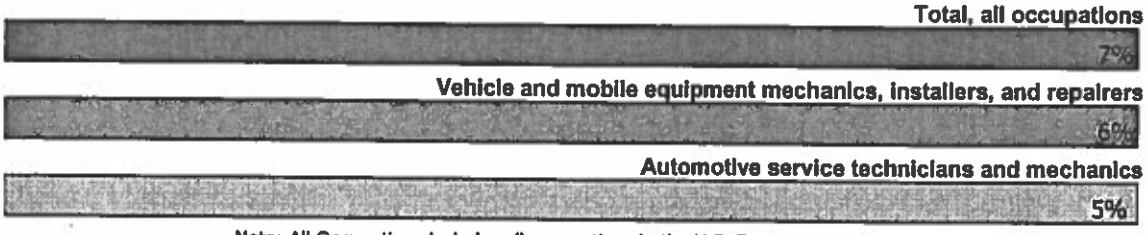
4. Building a successful program will allow UNM-G to obtain NATEF certification, GM ASAP, FCA, FORD FACT, TTEN, certification, expansion, updated state of the art equipment.

Job Outlook

Quick Facts: Automotive Service Technicians and Mechanics	
2016 Median Pay	$38,470 per year $18.50 per hour
Typical Entry-Level Education	Postsecondary non-degree award
Work Experience in a Related Occupation	None
On-the-job Training	Short-term on-the-job training
Number of Jobs, 2014	739,900
Job Outlook, 2014-24	5% (As fast as average)
Employment Change, 2014-24	39,100

Automotive Service Technicians and Mechanics

Percent change in employment, projected 2014-24



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

Employment of automotive service technicians and mechanics is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations.

Automotive mechanical and electrical repair and maintenance	36,350
Automotive parts, accessories, and tire stores	32,760

Many experienced technicians working for automobile dealers and independent repair shops receive a commission related to the labor cost charged to the customer. Under this system, which is commonly known as "flat rate" or "flag rate," weekly earnings depend on the amount of work completed. Some repair shops may pay technicians on an hourly basis instead.

Most service technicians work full time, and many work evenings or weekends. Overtime is common.

(Information taken from: https://www.bls.gov/ooh/installation-maintenance-and-repair/automotive-service-technicians-and-mechanics.htm#tab-6)

Short Term Occupational Projections

Area	Title	Base	Projected	Change	% change	Avg. anl openings
Arizona	Automotive service technician	15,180	15,460	280	1.9	540
Colorado	Automotive service technician	15,110	16,020	910	6.0	850
New Mexico	Automotive service technician	5,210	5,250	40	0.8	160
Utah	Automotive service technician	8,140	8,700	560	6.9	490

(Information Taken from: http://www.projectionscentral.com/Projections/LongTerm)

NM GALLUP

Navajo Nation Fleet Management: "Efficiently moving the Navajo Nation with safe, reliable transportation. Provide quality automotive support services to the Navajo nation."

Snap-On Tools: "Snap-on Incorporated is a leading global innovator, manufacturer and marketer of tools, diagnostics, and equipment, software and service solutions."

O'Reillys: "We are the dominant auto parts retailer in all of our market areas. From our roots as a single store in 1957 to our current size of 4,829 locations (and growing), we've come a long way. This website is a way to help our customers and investors become more familiar with our history, as well as who we are and how we operate."

City of Gallup: "Gallup is a small city in New Mexico, on historic Route 66."

Pepboys: "PEP BOYS TIRES, AUTO PARTS AND SERVICE WHATEVER THE SERVICE, THE BOYS HAVE YOU COVERED."

D & A Body Shop: "Auto body shop in Gallup, New Mexico."

T & T distributers: "Wholesale supplies. Janitorial, Food Service, 1st Aid, Safety, Lighting, Automotive, Industrial."

Matco Tools: "Matco Tools is a manufacturer and distributor of quality professional automotive repair tools, diagnostic equipment, and toolboxes. Our product line now numbers more than 13,000 items. We also guarantee and service the automotive repair and diagnostic tools and equipment we sell."

CarQuest: "Advance Auto Parts works hard to create an environment of honesty, integrity, mutual trust and dedication. Since our founding by Arthur Taubman in 1932, these values haven't changed."

- Inspire and build the self-confidence and success of every Team Member.
- Serve our customers better than anyone else – help them succeed.
- Grow the business and profitability with integrity.

Hunter Engineering Company: "The world leader in wheel alignment & wheel balancing systems, tire changers, brake service equipment, alignment lifts, and inspection lanes."

Pro-Cut on car brake lathes: "Manufacturers have either made Pro-Cut an essential tool for their dealers, or written technical service bulletins urging dealers to use the Pro-Cut lathe. Hunter engineering company."

Gallup Mckinley County Schools:

- Empower students through partnerships with parents, schools, and communities.
- Develop students who are self-directed lifelong learners.

3B-5Year Plan

UNM Gallup Automotive Technologies School: Five Year Plan (goals and objectives can be modified)

Objectives and Goals

Objective: To raise the overall functionality of the faculty, and facility image of the program to present a top level automotive instructional program to potential students as well as family and industry partners.

Goals: To provide expert instruction to students in the field of Automotive Technologies to make them attractive to local and national industry. To provide the opportunity for graduating students to have as many school and industry certificates of completion in as many disciplines as possible in order to be desired employees in the industry.

YEAR ONE:

Collaborate on plan with industry partners.
Initiate apprenticeships program
Complete Snap-on Letter of Intent.
Begin gathering documents for NATEF certification
Inspect facilities to determine needed steps for furnishings and equipment.
Instructor training schedule. Free training available from Snap-on for Multi Meter and Verus Edge Diagnostics Tool, both online. Other Industry Training as available.
Plan Classroom upgrade, to include; Layout drawing, Multi Meter Certification Kit through Snap-on and NC3. Paint, signage, and cabinetry.
Equipment, Verus Scan Tool, Multi Meter Certification Kit,
Plan training for year two.
Request budget for above.

YEAR TWO

Implement Plan from year one.
Inspect Tool Room to determine needs for upgrade, organization, and retention.
Establish needed tool list for Natef Accreditation.
Hire second time faculty
Modify course curriculum
Modify credit hours for completion
Instructor training. Pro-Cut Rotor Matching, Battery, Starting and Charging Certification. Other training as needed for Natef.
Plan Training for year three.
Clean and paint Tool room to prepare for Year Three Tool Room Implementation.
Request budget for above.
Begin Issuing Multi Meter Certifications.
Implement student Job Skills Instruction.

YEAR THREE

Implement Plan from Year Two. Including Tool Room Upgrade.
Establish 8 week rotation system for internships
Instructor Training Continues, Verus Edge Diagnostics. Any Needed for NATEF.
Plan training for year four.
Request Budget for above.
Add Rotor matching and Battery Certificates to those being issued.