



*Automotive Service Councils of California*  
Professionals in Automotive Service ~ Since 1940

## Policies and Procedures

AUTOMOTIVE SERVICE COUNCILS OF

CALIFORNIA EDUCATION TRAINING PROGRAM

Adopted by the Automotive Service Councils of California San Diego Chapter 24

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# **1.0 Introduction**

## **1.1 Program Standards**

The Automotive Service Councils of California Education Training Program was created by members of the ASCCA Education Foundation to create new opportunities for students to work in the independent automotive repair industry. The standards and policies are designed to provide students with the basic knowledge, skills, and experience needed for career entry work positions in aftermarket automotive repair dealers (ARD). The ASCCA students will earn an associates of science degree, and will gain valuable experience helping them excel in their careers upon successful completion of all program requirements.

## **1.2 Recruitment and Student Services**

Recruit student candidates that meet college entrance requirements and sponsoring ASCCA shop employment requirements. Provide student services such as career counseling, academic advisement, financial aid, etc. Maintain all student records. Implement an ASCCA specific graduation recognition activity. Ensure student progress is monitored throughout the degree process and corrective action is taken to ensure students graduate according to their desired education plan. The College will provide documentation that each student has acknowledged responsibilities and program requirements. The College will provide adequate tools, equipment, and instruction to manage a safe ASCCA class, and ensure all students obtain necessary competencies. Competencies can also be documented during practical work experience classes and instructional classes at sponsoring ASCCA ARDs or affiliate members of the association.

## **1.3 Evaluation and Compliance**

Compliance with program standards is based in part on the documentation and the annual business plan submitted by the institution via email. In the event of a disagreement between the college and ASCCA, regarding the college meeting program standards, a conference with three members of ASCCA will be held to work out a plan to meet all requirements within a timeframe determined by the committee.

## **1.4 Donations**

Keep good stewardship of the ASCCA donation vehicles, tools, equipment, and any other items donated on behalf of the association.

# **2.0 STANDARDS COMMITTEE**

## **2.1 Membership**

The ASCCA Standards Committee will be made up of a minimum of four and a maximum of 10 current ASCCA or board members and one education representative who will be appointed by the executive board. All will be voting members.

## **2.2 Meetings**

The ASCCA Standards Committee shall meet to recommend changes or revisions to the Program Standards. ASCCA Standards Committee members are required to attend all scheduled meetings. The meetings may take place as a portion of the college advisory meetings which are required twice yearly.

## **2.3 Approvals**

The ASCCA Standards Committee will make changes and/or revisions to the standards document as needed. The committee chair will submit changes to the ASCCA Board of Directors for approval. The recommendations brought to the Board of Directors by the committee will have been approved by the Standards Committee through a majority vote of the committee.

The ASCCA Board of Directors will review each recommended change and either approve each recommendation or return it to the committee for revision. In the event the committee does not fulfill its responsibilities, the ASCCA Board of Directors will take necessary action to ensure the efficacy of the ASCCA including replacement of committee members and submission of official documents. Colleges NATEF certified do not require ASCCA Standards Committee visits.

## **2.4 Distribution of Information**

Changes or revisions to the standards shall be distributed to the ASCCA board members and participating institutions and facilities 90 days prior to the first day of the start of the year in the year the changes shall become effective. The prior year Standards will remain in effect until the new Standards are submitted and approved.

# **3.0 PROGRAM CERTIFICATION**

## **3.1 Program Minimum Requirements**

Minimum program requirements are the minimum attribute each college must demonstrate to maintain ASCCA college status. If each of these requirements is not completed, the school will be placed on a remedial plan and a Notice of Program Deficiencies will be sent to the school administrator. A college meeting the minimum status must complete the following:

- Each ASCCA program must be NATEF accredited or approved by the equivalent ASCCA Standards Committee. For information about NATEF accreditation, go to the NATEF website at <http://www.natef.org>
- All students are required to take ASE student tests and 50% of graduates from each class are required to pass one ASE technician test.
- The college must award an Associate Degree or equivalent two-year degree accredited in the school's state and region. We support Bachelor of Science degrees with ASE Master Certifications and competencies.
- We encourage technical classes with student cohorts exclusive to ASCCA in enrollment and content where enrollment numbers are possible.
- Program must use ASCCA approved curriculum.
- Each school must have instructors and staff supporting the ASCCA degree program to deliver the curriculum.
- Each school must submit an authorization to start an ASCCA class to the B.O.D. Standards Committee. It is recommended that it be submitted 6 months prior to the start of class. A college attempting to start a student cohort must submit an application to the ASCCA standards committee and get approval prior to starting the class.
- All colleges will be required to submit an education plan to the ASCCA Standards committee.
- Each college is required to assign one faculty member as the college program representative.
- The program advisory committee meets twice a year. It will include primary members consisting of ASCCA members as well as key individuals from the high schools and colleges.

- The ASCCA program will ensure all active students are sponsored by a current ASCCA member shop or affiliated member by the first day of the first cooperative work experience class. The College must provide sponsorship reports to ASCEF as requested.

## **3.2 College Administration Responsibilities**

- Each ASCCA instructor must be certified in the area(s) taught.
- Have a written recruitment plan.
- Visit the local high schools regularly and communicate with the high school guidance counselors about this degree opportunity.
- Inform the college counseling department about the program and guide students to the ASCCA instructor.

## **3.3 Instructor Responsibilities**

- One faculty or adjunct faculty shall be designated as the primary program manager and contact for students, association, and college administration.
- An instructor must make at least two on site visits for each cooperative work experience class. This visit can be accomplished using distance education synchronous technology.
- Each ASCCA instructor must be at least ASE certified in the area(s) taught. Preferably an ASE Master Technician.
- Act as a school liaison between ASCCA and participating shops.
- Develop an education plan with a student and dealer to deliver curriculum including general education courses and a graduation timeline within two to three years with an associate's degree. The plan should consider the students continuing education transfer goals to a four year college, and the dealer need for business continuity and knowledge transfer ensuring the business and student is prepared for success.
- Integrated Approach: assure that all required components of ASCCA content are integrated into the instructional portion of the classroom.
- Provide instructions in accordance with the approved curriculum.
- Assist the school administration in recruiting and screening students to ensure that students meet program standards; including academic, technical, and hiring requirements of sponsoring ASCCA ARDs (automotive repair dealers).
- Coordinate the local ASCCA Advisory Committee.
- Monitor students' progress during the ASCCA shop co-op session and education plan.
- Set up a review half way through the students training to go over the student's performance, and identify student needs for full time employment opportunities, once the training has been completed. The evaluations should include the shop owner, teacher, student, and the technician mentors.
- Develop a marketing plan and submit the plan yearly to the ASCCA B.O.D.

## **4.0 Student Responsibilities**

- Maintain a valid driver's license with a driving record that is suitable for the ASCCA ARD insurance requirements.

- Be legally employable in the United States.
- Dress business professional and wear the ASCCA logo branded uniform consistent with the ASCCA program standards at all times while on campus, at ARD, and while attending ASCCA meetings and college events.
- Meet the sponsoring ASCCA ARD hiring requirements which may include submitting to a drug test and/or criminal background check.
- Provide sponsoring ASCCA ARD with responsible and productive employment by maintaining a NATEF competency record book, in which the student shall document each competency required for NATEF certification. The student will also maintain a student work record book documenting each labor task assigned by labor hour as independent or assisted including comebacks. The work record book will be used to measure student work efficiency by comparing the hours paid to the work performed independently. The record books must include artifacts such as repair orders, and must be signed by the student, mentor, and instructor prior to graduation.
- Each student must pass a final review prior to graduation which will include an oral examination, final written department exam, and final hands on test. A student successfully completing the final review will receive the highest designation awarded by the college and association during the graduation ceremony, graduation with honors, and will wear a special ASCCA tassel, patch, and shall receive other awards such as tools and supplies. This award and requirement shall apply to all ASCCA students.
- Maintain a sponsor relationship with an ASCCA ARD.
- Be responsible for program costs: tuition, fees and books.
- Apply for financial aid and scholarships each semester.
- Maintain academic standards and adhere to college academic policies.
- Maintain all school requirements to attain an associate degree.
- All students are required to take, and pass ASE student tests or ASE technician tests each semester. The ASE student test shall be considered the standard test regardless of the final exam delivered by the class instructor.
- Maintain an education plan with the ASCCA instructor, college counselors, and ARD designee.
- Failure to comply with ASCCA standards will result in removal from the program.

## **5.0 ASCCA Automotive Repair Dealer Responsibilities**

Become a sponsoring ASCCA shop by signing a shop/student sponsorship form.

Interview and select prospective student(s). Negotiate a wage plan with the student, for the student's co-op periods. The committee recommends the plan should include implemental raises for a high performing student after successfully completing each semester. The plan may include a tool purchasing plan; and tuition reimbursement after graduation, and one year of successful full-time employment. The plan should provide the student a vision of the future including expected income short term, during the program, and long term after the program has been completed. Provide the ASCCA student with uniforms consistent with the other ASCCA shop technicians of the program. Provide marketing support for the program. Ensure students perform specific competencies related to each course subject by ensuring the students record books are maintained and signed. Assign a certified mentoring technician to each student for each work experience course. Monitor and select appropriate mentoring technicians. Attend all college advisory meetings and ASCCA meetings related to the student program.

Communicate professionally with the student and mentoring technician often during each semester, and review student and technician performance referring to the student record books which shall always be maintained and current . Contact the assigned instructor, chapter president, or ASCCA chapter education committee to resolve problems. Attempt to resolve problems with the long-term student success as the primary goal of the program. Do not hire students who are sponsored by other ASCCA ARDs without permission from the local chapter board of directors, instructor, and education committee. Failure to comply with ASCCA standards will result in removal from the program after review by the chapter B.O.D.

## **6.0 Class Start Authorization Policy**

Each college must submit an Authorization to Start an ASCCA class as part of the colleges' Comprehensive Business Plan to ASCCA six months in advance of starting the proposed class. The Authorization to start a class request will be reviewed by the Standards Committee and the College will be evaluated for program compliance. Authorization or Notification of Deficiency will be provided to the college within 90 days of the request submission. Authorization to start a new class will only be provided to colleges that are in compliance with the standards or have a specific approved deficiency plan on file. All schools will be required to have a comprehensive business plan on file, reviewed and/or updated bi-annually, as this may be requested by ASCCA or the as applicable. A sample Business Plan has been made available to all schools by means of the ASCCA website.

### **6.1 Program Deficiency Plan**

- If an ASCCA college does not meet the program minimum requirements, will be notified by a representative of ASCCA of the deficiencies and must submit a deficiency plan to address the concerns.
- Program requirements will be monitored throughout the year and may be reported at any time. The college will have 30 days to respond to the notification and an additional 60 days to provide a plan for remediation. The plan must be approved by the Standards Committee.
- The goal is to identify program needs and adjust as quickly as possible.
- NATEF certification shall be considered the primary goal but not necessary a requirement depending upon the recommendation of the committee.
- Compliance to standard NATEF competencies with monitored progress and standards for accomplishing student tasks shall be the primary consideration, and department organization, cleanliness, and accreditation.

### **6.2 Co-op Requirements**

A basic component of the program is a well-structured, supervised, and documented cooperative internship of work experience. College coordinators may find guidance in the current NATEF accreditation standards which reference a program providing instruction at the MAST level must have a minimum total of 1200 hours of combined laboratory/shop (co-op) and classroom instruction. All students must be visited within the first week of the work experience class. The student must keep record books and should be reviewed by the ASCCA instructor. Students must complete a cooperative education experience aligned with each instructional learning objective. The objectives will be signed by the instructor, student, and ASCCA ARD manager. The student will be graded based on input from the manager, mentoring technician, instructor, and self-reflection. Failure to follow California title 5 guidelines will result in educational standards review of the ASCCA ARD program participation and moving the student to another sponsor with approval from the chapter B.O.D. Students who have signed a sponsor agreement should not be moved to another ARD without approval of the Standards Committee.

### **6.3 Sponsorship Policy**

The ASCCA degree is an exclusive technician development program for aftermarket ARDs associated with ASCCA. Therefore, all students are required to have a sponsor (employer) by the first day of work experience. Students who are not employed by an ASCCA shop must not appear on any student list but classified as



“candidates”. Students who lose their sponsor can no longer be classified as ASCCA students unless they are able to gain another ASCCA sponsor. Once class has started, all students should be classified as Active or Active Un-sponsored Student. Beginning the first day of 2nd semester, if a student does not have a sponsor, they should no longer be able to participate in the program.

ASCCA offers the flexibility to allow one full semester of on-campus instruction before the first cooperative education period with support from the local chapter. Classes used for ASCCA are general program classes. A student may transfer existing credit into the ASCCA degree and completed courses may be credited by exam. Work experience must be completed at an ASCCA ARD, but faculty may accept previous work experience credits.

## **7.0 Instructor Qualifications Policy**

NATEF defines program standards, which include requirements for instructors. The instructor must be ASE certified in the areas that they teach. The instructors must be 100% certified by the start of the new school year.

## **7.1 Work Experience Policy**

Work experience is the most important class because students are accountable for productivity. The student record books will contain documented assisted and independently performed competencies with paid hours versus flat rate hours. Refer to the record book. This will allow managers to measure student productivity. It is important that the students stay on track and do the work associated with the learning objectives.

## **7.3 Additional Student Training**

The student may also elect to attend additional aftermarket training classes offered by ASCCA and partnering parts suppliers while on co-op or during the internship portion of the program with the approval of their sponsoring ASCCA ARD. ASCCA encourages a student to attend local chapter meetings and training events consistent with the goal of owning and operating a business.

## **7.4 Co-op Rationale**

The concept is that the student will learn the automotive material on campus, in the lab, and at the ASCCA shop. The co-op component allows the student to apply his knowledge and skills in a practical application at the shop much sooner than he would in a traditional college program. Students should rotate a minimum of 4 times throughout the 2 years. Colleges are asked to accommodate each regular semester including a summer school schedule. The college uses a traditional semester. The student will attend college classes two to three days a week and work part time at the ARD two to four days a week. The schedule should be developed for the best interest of the student and ARD.

## 7.5 Co-op Schedule Recommendations

Pathway listed below:

Semester 1		Semester 2		Semester 3 Summer		Semester 4	
Introduction Auto	1	Auto Engine A1	5	Auto Brakes A4	5	Engine Performance A8	5
Electrical Auto A6	3	Music	3	Work Experience (opt)	(3)	Math	6
Electronics	3	Sociology	3			Work Experience	3
English	5	PE	1.5				
Work Experience	3	Work Experience	3	General Elective			
Total Units 15		Total Units 15.5		Total Units 8		Total Units 14	

Semester 5		Semester 6 Summer	
Hybrid EV	5	Smog Inspector I	3
Humanities	3	Smog Inspector II	2
Communication	3	Electronics 110	4
Health Fitness	1.5		
Work Experience	3	Work Experience	
Total Units 15.5		Total Units 9	

**A student should be able to start the program at the beginning of any semester throughout the academic year. We suggest electrical and electronics training be completed during the first semester.**

**A student and ARD may also want to create a specialization pathway. For example, a service writer pathway will emphasize business courses and less automotive courses.**

## 7.6 On-site Visit Rationale

ASCCA requires that the college make one on-site visit each co-op and document the contact but should be in continuous communication with the ASCCA shop to ensure a quality internship. If the college isn't checking up on the students, then often the students start working on non-related, non-value-added jobs at the ASCCA shop. This is not a student problem, but one of proper program management. The student is required to complete certain NATEF tasks each co-op. It is the school co-op coordinators job to make sure the ASCCA shop is following these requirements and not wasting the student's time. It is imperative that colleges document the student co-op experience and track their progress at the ASCCA shop.

**Unacceptable Solution:** This would be if the instructor or co-op coordinator did not make any on-site visits to the ASCCA shop. Making these contacts only by phone is also unacceptable.

## Appendix



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## ASCCA ISP Sponsor Application Agreement Form

Acceptance into the ASCCA Degree program ultimately requires the sponsorship of student work experience at an ASCCA repair dealer or affiliated member of the association. For example, a student needs work experience related to their career goals and the business goals of the sponsor. Please use this form during the student interview process and submit scanned signed form to the college department coordinator. The coordinator will send the form to the ASCCA designee administrator.

### Student Information

Name of College	Name of College Coordinator
—	—
Coordinator Phone Number	Coordinator Email Address
—	—
Student Last Name	Student First Name
—	—
Birthdate	Phone Number
—	
Address	Email
—	

Please briefly describe the role of the student at your facility during years 1 - 3 with three objectives:

Goals Year 1

- 1.
- 2.
- 3.

Goals Year 2

- 1.
- 2.
- 3.

Goals Year 3

- 1.
- 2.
- 3.

As an ASSCA Sponsor we agree to appoint designated mentoring technician(s) to support the effort of knowledge transfer and student success. The appointed mentors will work closely with the ASSCA student and college coordinator and instructors to ensure work experience competencies are completed by the trainee.

All work will be evaluated during each work experience semester by the mentors, instructor, and student in the Student Record Book of NATEF Competencies. The dealership will provide minimum wages, and increased wages based on efficient progress and provide constructive feedback during each work experience semester. The dealership manager will provide a clear vision of the future to the student of wage increase based on the student's ability to perform work to industry standards.

ASSCA Business Contact Information

Business Name	
Address	
Phone	

Email	
Manager Name Title	
Phone	
Email	
Mentor Technician Name Title	
Phone	
Email	
Student Starting Wage	

**Student:**

I agree to follow the policies and procedures as outlined in the ASCCA degree program.

Student Signature \_\_\_\_\_ Date \_\_\_\_\_

**ASCCA ARD Manager/ ASCCA Degree Coordinator:**

I agree to follow the policies and procedures as outlined in the ASCCA degree program.

Manager Signature \_\_\_\_\_ Date \_\_\_\_\_

Mentor Signature \_\_\_\_\_ Date \_\_\_\_\_



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### Sponsorship Intention Form ASCCA Student Educational Training

I wish to sponsor a student(s) in the ASCCA program.  
\_\_\_\_\_ Date

Number of Students Wanted \_\_\_\_\_

ARD Dealership Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone Number \_\_\_\_\_ Email Address \_\_\_\_\_

Contact Person \_\_\_\_\_ Title \_\_\_\_\_

\_\_\_\_\_ Yes, I have a \_\_\_\_\_ student(s) to sponsor in mind. Please provide the name and student contact information:

Student Name	Phone	Email
Student Name	Phone	Email
Student Name	Phone	Email

\_\_\_\_\_ Yes, I would like help in recruiting \_\_\_\_\_ (number) of students

\_\_\_\_\_ I need additional information about the ASSET Program.

PLEASE FAX/EMAIL THIS FORM TO: 619-660-4389 [brad.mccombs@gcccd.edu](mailto:brad.mccombs@gcccd.edu) Brad McCombs 619-660-4267 619-701-1226



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## ASCCA Student Application

The ASCCA Degree is designed to provide students who are interested in automotive service management and repair; excellent career opportunities by providing competency-based work experience, and college education courses, utilizing the knowledge skills and abilities of association shop owners, college counselors, and instructors to help a student achieve their career goals. This degree mainly applies to automotive service and repair, but may also lead to business ownership, service management, parts management, insurance, sales, and other affiliated career opportunities based on the student and association ARD (automotive repair dealership) needs.

Students are required to develop an education plan with a college counselor, instructor, and ARD manager, and maintain the education plan throughout the program. The program is a two-year associates of science degree. However, the plan should consider the student desire to transfer to university education with a specific career pathway and should consider the ASSCA business owners needs for business transitions and profit. Student personal goals and skills will require upfront evaluation by the counseling department. The overall goal of the program should provide a student with vision of their future with a five-year career plan that includes industry certification, and practical evaluated on the job training (work experience classes). Each work experience class should have objectives related to competency-based learning, and a student will be evaluated based upon ability to accomplish objectives using a grading scale. A successful student will develop a portfolio of work competencies during the degree program and be career entry ready upon completion of the program. Students are paid minimum wages throughout the program. Furthermore, students have opportunities to apply for ASCCA scholarships and apply for financial aid.

### Student Application and Enrollment Procedures: Read and Sign This Form

- [Apply and enroll](#) in the college or college nearest your ARD automotive repair dealer.
- [Apply for financial aid and scholarships each semester.](#)
- [Talk to a counselor about your education plan.](#) Planning will save time and money.
- [Develop a resume](#) designed to attain a relationship with a ASCCA repair dealer.
- Maintain a valid driver's license with a driving record that is suitable for the ASCCA ARD insurance requirements.
- Be legally employable in the United States.
- Dress business professional and always wear the ASCCA logo branded uniform consistent with the ASCCA program standards while on campus, at ARD, and while attending ASCCA meetings and college events.
- Meet the sponsoring ASCCA ARD hiring requirements which may include submitting to a drug test and/or criminal background check.
- Provide sponsoring ASCCA ARD with responsible and productive employment by maintaining a NATEF competency record book, in which the student shall document each competency required for NATEF certification. The student will also maintain a student work record book documenting each labor task assigned by labor hour as independent or assisted including comebacks. The work record book will be used to measure student work efficiency by comparing the hours paid to the work performed independently. The

record books must include artifacts such as repair orders, and must be signed by the student, mentor, and instructor prior to graduation.

- Each student must pass a final review prior to graduation which will include an oral examination, final written department exam, and final hands on test. A student successfully completing the final review will receive the highest designation awarded by the college and association during the graduation ceremony, graduation with honors, and will wear a special ASCCA tassel, patch, and shall receive other awards such as tools and supplies. This award and requirement shall apply to all ASCCA students.
- Maintain a sponsor relationship with an ASCCA ARD.
- Be responsible for program costs: tuition, fees and books.
- Maintain academic standards and adhere to college academic policies.
- Maintain all school requirements to attain an associate degree.
- All students are required to take, and pass ASE student tests or ASE technician tests each semester. The ASE student test shall be considered the standard test regardless of the final exam delivered by the class instructor.
- Maintain an education plan with the ASCCA instructor, college counselors, and ARD designee.
- Failure to comply with ASCCA standards will result in removal from the program.

I agree to the following policies and procedures and desire to enroll in the ASCCA degree program.

Name	Signature
-	
Address	Phone
-	
-	
Email	

Please email or deliver this form to your college program coordinator.

[Brad McCombs](#)

[Cuyamaca College Automotive Program Coordinator](#)

[900 Rancho San Diego Parkway K-118](#)

[El Cajon CA 92119](#)

(619) 660-4267 Office

(619) 701-1226 Cell

[Brad.McCombs@GCCCD.Edu](mailto:Brad.McCombs@GCCCD.Edu)







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## ASCCA Degree Program College Application

Please read the ASCCA policies and procedures and provide the following information:

Name of College	
Name of Automotive Department Chair	
College Administration Contact	

Please provide a written proposal describing how you will implement and administer the ASCCA degree program. Send the proposal to:

ASCCA Education Foundation  
1 Capitol Mall Suite 800  
Sacramento, California 95814



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**Work Experience Record Book Cuyamaca College Automotive Technology**

Student Name:
Sponsoring ARD Dealership:
Supervisor: <span style="margin-left: 150px;">Phone Number:</span> <span style="margin-left: 150px;">Email Address:</span>
Coordinator: <span style="margin-left: 150px;">Phones:</span>
Email:

**STUDENT ATTENDANCE SUMMARY**

1. Fill in the number of hours you worked each day.
2. Note any partial days: L = Late      A = Absent      LE = Left Early
3. Have your supervisor or lead technician initial this form at the end of each week.
4. Always notify your supervisor and instructor of any planned or unplanned absence.

Week of Date	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Supervisor OK Initial
1							
2							

3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

16							
----	--	--	--	--	--	--	--

## **Work Area: Electrical Systems**

Demonstrate the Symptom to System to Component to Cause diagnostic process relating to electrical concerns. Use tools and equipment associated with basic electrical diagnosis and repair. Understand and interpret wiring diagrams using Ford diagnostic charts and descriptions. Diagnosis and repair a basic electrical concern.

## **Work Area: Brake Systems**

Demonstrate the Symptom to System to Component to Cause diagnostic process and perform preliminary brake system checks, diagnosis, and repairs.

- Identify common customer concerns related to the brake systems.
- Perform brake system diagnostic tests and interpret the results.
- Inspect the brake hydraulic system for leaks and proper operation.
- Assist the hydraulic bleeding of a brake system.
- Inspect, measure, and service brake drums, shoes, discs, pads, and brake calipers.
- Perform diagnosis and service on a Antilock Brake system.
- Perform diagnosis and service on a Traction Control system.
- Perform diagnosis and service on an electronic hybrid brake system.

## **Work Area: Electronic Systems**

- Demonstrate the Symptom to System to Component to Cause diagnostic process and perform diagnosis and repair to electronic systems.
- Demonstrate knowledge of special tools and equipment used to perform diagnosis and repair of electronic systems.
- Describe service publications, special service messages, discussion boards, and the workshop manual website to assist electronic diagnosis.
- Perform diagnostic test procedures.

## **Work Area: Climate Control**

- Retrieve DTCs from the control head, powertrain control module, and climate control module.
- Diagnose refrigeration, heating, air management, and control subsystem concerns.
- Diagnose powertrain control concerns related to the compressor clutch and engine cooling fan circuits.
- Use special tools to perform A/C and heating related diagnosis and repair.
- Perform procedures related to refrigeration, heating, air management, and control systems and subsystems.

## **Work Area: Steering and Suspension**

- Properly inspect and test steering and suspension system components.
- Correctly inspect suspension and measure ball joint, tie rod, and control arm bushing deflection.
- Correctly diagnose a fault in the Tire Monitoring System (TPMS).
- Diagnose and repair a problem in the Electronic Power Assist Steering system.
- Diagnose and repair a fault in the Continuously Controlled Damping (CCD) suspension.
- Perform and pump flow and pressure test using a power steering analyzer.
- Diagnose and correct excessive tire wear and pull concerns using an alignment machine.
- Diagnose engine, driveline, and wheel vibration concerns using a NVH Analyzer.
- Calculate engine frequencies, engine accessory frequencies, drive shaft frequencies, and wheel and tire frequencies.
- Diagnose a noise concern using the ChassisEAR.
- Diagnose and repair a tire vibration using a Balancer.

## **Work Area: Power Train**

- Diagnose and repair automatic and manual transmission related customer concerns.
- Diagnose and repair electronic and electrical concerns related to automatic and manual transmissions.
- Diagnose and repair axle, differential, and transfer case related customer concerns.

## **Engine Performance Diagnosis and Repair Gasoline and Diesel**

- Diagnose and repair engine related customer concerns.
- Diagnose and repair engine performance related concerns.
- Describe the effects of engine and engine performance related concerns as they apply to emissions.
- Demonstrate how to properly diagnose and replace catalytic converters for diesel and gasoline engines

- Test and replace various engine related sensors and actuators.

**Other Work-Related Areas: Describe: PDI, Vehicle Inspections, MLR, Other:  
Student Goals**

The student, dealership, and ASCCA instructor have worked together to set the following student performance goals for the CO-OP quarter:

1. The student will assist in producing an additional \_\_\_\_\_ labor hours per week. During the first coop we strongly recommend that the student is supervised and works closely with a lead technician at all times. The student will track their progress in the logbook assuming that work is available.
2. The student will:


3. The student will:


4. The student will:


5. The student will:


Student:	Date:
Supervisor:	Date:
Instructor:	Date:



College ASCCA Program – Dealer Cooperative Training Record Book

Date	Labor Time	Description of Concern	Description of Correction	Assisted or Independent
				A or I

## College ASCCA Program – Dealer Cooperative Training Record Book

Date	Labor Time	Description of Concern	Description of Correction	Assisted or Independent
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# College ASCCA Program – Dealer Cooperative Training Record Book

Date	Labor Time	Description of Concern	Description of Correction	Assisted or Independent
				A or I

Summary applies to semester of evaluation:

Total hours paid hourly:	
Total billed hours	
Total assisted hours	
Total independent hours	
Total hours of production	

## COMMUNITY SERVICE LEARNING/WORK EXPERIENCE AGREEMENT

CUYAMACA COLLEGE  
900 Rancho San Diego Parkway  
El Cajon, CA 92020  
(619) 660-4000

GROSSMONT COLLEGE  
8800 Grossmont College Drive  
El Cajon, CA 92020  
(619) 644-7000

### CHECK ONE BOX ONLY:

**Community Service Learning** – Students provide service to a community-based organization or school that meets a predetermined public need and relates to college coursework or career goals.

**Work Experience** – Students work in a private or public organization to gain professional skills related to college curriculum and/or their desired career.

**ROP Student** - All parties participating in this agreement with an ROP student have a clear understanding of this program and are willing to participate according to the Title 5 California Administrative Code Guidelines Sections 10080 through 10111.

Instructor's Name	Subject	Number	Section #	Units	Semester/Year

Student Name	
Cooperating Agency Name	
Manager Supervisor	

1. The Cooperating Agency agrees to provide the student an opportunity to learn and perform within the framework of its operation without regard to race, age, color, national origin, sex (including sexual harassment) or handicap (including disability).
2. For purposes of qualifying for college credit the Cooperating Agency agrees to provide:
  - a. A verification of the hours worked per week for the semester.
  - b. A rating of the student's performance on the job. (form provided)
  - c. The Cooperating Agency reserves the right to release any student during the semester. Should this occur, the College will be notified immediately.
3. The Grossmont-Cuyamaca Community College District will furnish commercial general liability and workers compensation insurance coverage for the students while participating in the Work Experience Program and actually working for the Cooperating Agency.
4. The College may drop a student for failure to meet minimum scholastic or behavioral standards. The Cooperating Agency will be notified immediately should this occur.
5. The College staff will meet at least twice a semester with the Cooperating Agencies and with the students at the work site.
6. Students working full-time, who desire credit for a portion of their regular work week, should contact the appropriate administrator for special clearance. Agency verification of extraordinary assignment and training will be required.

**HOLD HARMLESS AGREEMENTS**

The District shall agree to defend, indemnify, protect, and hold harmless the Cooperating Agency, its officers, agents, and employees against any and all losses, injuries, claims, actions, judgments, and liens which arise from or are connected with the acts or omissions of the District, its officers, agents, and employees.

The Cooperating Agency shall agree to indemnify, protect, and hold harmless the District, its officers, agents, and employees against any and all losses, injuries, claims, actions, judgments, and liens which arise from or are connected with the acts or omissions of the Agency, its officers, agents, and employees.

**TRAINING PLAN**

All training experiences shall be in accordance with the student's training plan which includes occupational goals and objectives and duration of training for attainment of each competency.

The student is required to state occupational goals and job objectives in the space below. They should be SPECIFIC, ATTAINABLE, and MEASURABLE, and may be revised at anytime during the semester.

**The final goals and objectives as agreed upon by the student and instructor are attached to this document.**

**PLEASE PRINT**

It is agreed that \_\_\_\_\_ Cooperating Agency

Contact Person \_\_\_\_\_ Phone Number \_\_\_\_\_

Address \_\_\_\_\_

shall assign \_\_\_\_\_ Name of Student

for purposes of providing work experience as part of the student's college training. The student shall be assigned for an average of \_\_\_\_\_ hours per week. In order to receive credit the students must successfully complete the assignment as agreed.

STUDENT \_\_\_\_\_  
Signature Date

COOPERATING  
AGENCY \_\_\_\_\_  
Signature Date

INSTRUCTOR \_\_\_\_\_  
Signature Date

**DISTRIBUTION BY INSTRUCTOR:**

03-0831-002W  
PE20.F1

**GROSSMONT-CUYAMACA COMMUNITY COLLEGE DIST  
COMMUNITY SERVICE LEARNING/WORK EXPERIENCE**

**STUDENT INFORMATION SHEET**

<b>Year</b>	<b>Fall, Spring, Summer</b>	<b>Course Number</b>	<b>Course Title</b>
-			
<b>Instructor Name</b>		<b>Mentor Name</b>	
-			
<b>Student Last Name</b>		<b>Student First Name</b>	<b>Student Middle Name</b>
-			
<b>Home Address</b>		<b>City</b>	<b>Zip Code</b>
-			
<b>Phone Number</b>		<b>Email Address</b>	
-			

Current Semester Course Schedule:

Course No.	Course Title	Units	Time	Instructor	Room


College Major	Current Unit Load	Units Completed in Major
-		
Work Experience Agency	Street Address	City
-		
Telephone	Email	Agency Coordinator
-		

Visitation/Observation Dates:

Final Grade \_\_\_\_\_  
(Evaluation Attached)

\_\_\_\_\_  
\_\_\_\_\_

Instructor Comments: Onsite Visit

Visit 1 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Visit 2 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Summary \_\_\_\_\_





# Competencies Student Record Book

Cuyamaca College NATEF Task Documentation Form by Class and Instructor. The instructor will provide a task artifact documenting each students' performance. NATEF tasks are required to be documented in the syllabus. NATEF MASTER Program. Each student is required to have this form signed by the instructor.

95% of all Priority 1 (P-1)

80% of all Priority 2 (P-2)

50% of all Priority 3 (P-3)

AT 120, 123, 124, 141, 142 Engine Performance and Emissions

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N
<p><b>AUTO 120</b></p>			
<p>Identify and interpret engine performance concerns; determine necessary action. P1</p>			
<p>Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. P1</p>			
<p>Diagnose abnormal engine noises or vibration concerns; determine necessary action. P3</p>			

<p>Diagnose the cause of excessive oil consumption, coolant consumption, unusual exhaust color, odor, and sound; determine necessary action. P2</p>			
<p>Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action. P1</p>			
<p>Perform cylinder power balance test; determine necessary action. P1</p>			
<p>Perform cylinder leakage test; determine necessary action. P1</p>			
<p>Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine necessary action. P2</p>			
<p>Verify engine operating temperature; determine necessary action. P1</p>			

<p>Verify correct camshaft timing. P1</p>			
<p>Total NATEF Tasks Completed</p>			<p><b>P1</b> _____ <b>P2</b> _____ <b>P3</b> _____</p>
<p>AUTO 123 AND 124</p>			
<p>Diagnose (troubleshoot) hot or cold no-starting, hard starting, poor drivability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems; determine necessary action. P2</p>			
<p>Check fuel for contaminants; determine necessary action. P2</p>			
<p>Inspect and test fuel pumps and pump control systems for pressure, regulation, and volume; perform necessary action. P1</p>			

Replace fuel filter(s). P1			
Inspect, service, or replace air filters, filter housings, and intake duct work. P1			
Inspect throttle body, air induction system, intake manifold and gaskets for vacuum leaks and/or unmetered air. P2			
Inspect and test fuel injectors. P2			
Verify idle control operation. P1			
Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; perform necessary action. P1			
Inspect condition of exhaust system hangers, brackets, clamps, and heat shields; repair or replace as needed. P1			

<p>Perform exhaust system back-pressure test; determine necessary action. P2</p>			
<p>Check and refill diesel exhaust fluid (DEF). P3</p>			
<p>Test the operation of turbocharger/supercharger systems; determine necessary action. P3</p>			
<p>Diagnose oil leaks, emissions, and driveability concerns caused by the positive crankcase ventilation (PCV) system; determine necessary action. P3</p>			
<p>Inspect, test, and service positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses; perform necessary action. P2</p>			

<p>Diagnose emissions and drivability concerns caused by the exhaust gas recirculation (EGR) system; determine necessary action. P3</p>			
<p>Diagnose emissions and drivability concerns caused by the secondary air injection and catalytic converter systems; determine necessary action. P2</p>			
<p>Diagnose emissions and drivability concerns caused by the evaporative emissions control system; determine necessary action. P2</p>			
<p>Inspect and test electrical/electronic sensors, controls, and wiring of exhaust gas recirculation (EGR) systems; perform necessary action. P2</p>			
<p>Inspect, test, service, and replace components of the EGR system including tubing, exhaust passages, vacuum/pressure controls, filters, and hoses; perform necessary action. P2</p>			

<p>Inspect and test electrical/electronically-operated components and circuits of air injection systems; perform necessary action. P3</p>			
<p>Inspect and test catalytic converter efficiency. P2</p>			
<p>Inspect and test components and hoses of the evaporative emissions control system; perform necessary action. P1</p>			
<p>Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems; determine necessary action. P3</p>			
<p>Total NATEF Tasks Completed</p>			<p><b>P1</b> _____ <b>P2</b> _____ <b>P3</b> _____</p>



**Notes:**

Engine performance is an integrated content area. Many of the tasks overlap. It is difficult to teach base engine testing without discussing base engine functional tests and the relationship of fuel to ignition. Alternate fuel systems diesel and gasoline should be discussed.

**Auto 123 is BAR specified diagnostic training. Auto 123 can be used by students as alternative ASE testing for Smog Repair licensing.** Department ASE student tests A6 and A8 will be used by the department for student learning outcome assessments. The department version of the ASE L1 test will be used by the department for Auto 123 and 124 student learning outcome assessments. **Students must pass Auto 123 to qualify to take the BAR Repair License test.**

Students who desire to take Auto 141 and 142 should be familiar with all of the engine performance NATEF tasks.

**Auto 124 students should have already completed the engine performance NATEF tasks.** Auto 124 is an in depth study of integrated engine performance problems and projects. Students will demonstrate command of the subject by performance tests designed by the department. The department performance tests and the department L1 test will be used for student learning outcome assessment

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**Cuyamaca College NATEF Task Documentation Form by Class and Instructor. The instructor will provide a task artifact documenting each students' performance. Required NATEF tasks are required to be documented in the syllabus. NATEF MASTER Program. Each student is required to have this form signed by the instructor. Please send 2 student artifacts including samples of all of their work by electronic file.**

- 95% of all Priority 1 (P-1) tasks must be taught (36 Tasks)
- 80% of all Priority 2 (P-2) tasks must be taught (14 Tasks)
- 50% of all Priority 3 (P-3) tasks must be taught (8 Tasks)

**AT 122 and 127 Automotive Electrical and Electronic Systems should be taken prior to other automotive college courses.**

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N
<b>Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.</b> <b>P1</b>			

<p><b>Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law).</b>  <b>P1</b></p>			
<p><b>Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow and resistance.</b>  <b>P1</b></p>			
<p><b>Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.</b>  <b>P1</b></p>			
<p><b>Check operation of electrical circuits with a test light.</b>  <b>P1</b></p>			
<p><b>Check operation of electrical circuits with fused jumper wires.</b>  <b>P1</b></p>			

<p><b>Use wiring diagrams during the diagnosis (troubleshooting) of electrical/electronic circuit problems.</b> <b>P1</b></p>			
<p><b>Diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine necessary action.</b> <b>P1</b></p>			
<p><b>Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.</b> <b>P1</b></p>			
<p><b>Inspect and test switches, connectors, relays, solenoid solid state devices, and wires of electrical/electronic circuits; determine necessary action.</b> <b>P1</b></p>			
<p><b>Replace electrical connectors and terminal ends.</b> <b>P1</b></p>			
<p><b>Repair wiring harness.</b> <b>P1</b></p>			
<p><b>Perform solder repair of electrical wiring.</b> <b>P1</b></p>			

<p><b>Check electrical/electronic circuit waveforms; interpret readings and determine needed repairs.</b> <b>P2</b></p>			
<p><b>Repair CAN/BUS wiring harness.</b> <b>P1</b></p>			
<p><b>Perform battery state-of-charge test; determine necessary action.</b> <b>P1</b></p>			
<p><b>Confirm proper battery capacity for vehicle application; perform battery capacity test; determine necessary action.</b> <b>P1</b></p>			
<p><b>Maintain or restore electronic memory functions.</b> <b>P1</b></p>			
<p><b>Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.</b> <b>P1</b></p>			

<p><b>Perform slow/fast battery charge according to manufacturer's recommendations.</b> <b>P1</b></p>			
<p><b>Jump-start vehicle using jumper cables and a booster battery or an auxiliary power supply.</b> <b>P1</b></p>			
<p><b>Identify high-voltage circuits of electric or hybrid electric vehicle and related safety precautions.</b> <b>P3</b></p>			
<p><b>Identify electronic modules, security systems, radios, and other accessories that require initialization or code entry after reconnecting vehicle battery.</b> <b>P1</b></p>			
<p><b>Identify hybrid vehicle auxiliary (12v) battery service, repair, and test procedures.</b> <b>P3</b></p>			

<p><b>Perform starter current draw tests; determine necessary action.</b> P1</p>			
<p><b>Perform starter circuit voltage drop tests; determine necessary action.</b> P1</p>			
<p><b>Inspect and test starter relays and solenoids; determine necessary action.</b> P2</p>			
<p><b>Remove and install starter in a vehicle.</b> P1</p>			
<p><b>Inspect and test switches, connectors, and wires of starter control circuits; determine necessary action.</b> P2</p>			
<p><b>Differentiate between electrical and engine mechanical problems that cause a slow-crank or a no-crank condition.</b> P2</p>			
<p><b>Perform charging system output test; determine necessary action.</b> P1</p>			

<p><b>Diagnose (troubleshoot) charging system for causes of undercharge, no-charge, or overcharge conditions.</b> <b>P1</b></p>			
<p><b>Inspect, adjust, or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment.</b> <b>P1</b></p>			
<p><b>Remove, inspect, and re-install generator (alternator).</b> <b>P1</b></p>			
<p><b>Perform charging circuit voltage drop tests; determine necessary action.</b> <b>P1</b></p>			
<p><b>Diagnose (troubleshoot) the causes of brighter-than-normal, intermittent, dim, or no light operation; determine necessary action.</b> <b>P1</b></p>			
<p><b>Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed.</b> <b>P1</b></p>			

<p><b>Aim headlights.</b> <b>P2</b></p>			
<p><b>Identify system voltage and safety precautions associated with high-intensity discharge headlights.</b> <b>P2</b></p>			
<p><b>Inspect and test gauges and gauge sending units for causes of abnormal gauge readings; determine necessary action.</b> <b>P2</b></p>			
<p><b>Diagnose (troubleshoot) the causes of incorrect operation of warning devices and other driver information systems; determine necessary action.</b> <b>P2</b></p>			
<p><b>Diagnose (troubleshoot) causes of incorrect horn operation; perform necessary action.</b> <b>P1</b></p>			
<p><b>Diagnose (troubleshoot) causes of incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action.</b> <b>P2</b></p>			



<p><b>Diagnose (troubleshoot) windshield washer problems; perform necessary action.</b> <b>P2</b></p>			
<p><b>Diagnose (troubleshoot) incorrect operation of motor-driven accessory circuits; determine necessary action.</b> <b>P2</b></p>			
<p><b>Diagnose (troubleshoot) incorrect electric lock operation (including remote keyless entry); determine necessary action.</b> <b>P2</b></p>			
<p><b>Diagnose (troubleshoot) incorrect operation of cruise control systems; determine necessary action.</b> <b>P3</b></p>			
<p><b>Diagnose (troubleshoot) supplemental restraint system (SRS) problems; determine necessary action.</b> <b>P2</b></p>			
<p><b>Disable and enable an airbag system for vehicle service; verify indicator lamp operation.</b> <b>P1</b></p>			
<p><b>Remove and reinstall door panel.</b> <b>P1</b></p>			

<p><b>Check for module communication errors (including CAN/BUS systems) using a scan tool.</b> <b>P2</b></p>			
<p><b>Describe the operation of keyless entry/remote-start systems.</b> <b>P3</b></p>			
<p><b>Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators.</b> <b>P1</b></p>			
<p><b>Verify windshield wiper and washer operation, replace wiper blades.</b> <b>P1</b></p>			
<p><b>Diagnose (troubleshoot) radio static and weak, intermittent, or no radio reception; determine necessary action.</b> <b>P3</b></p>			
<p><b>Diagnose (troubleshoot) body electronic system circuits using a scan tool; determine necessary action.</b> <b>P3</b></p>			

Diagnose the cause(s) of false, intermittent, or no operation of anti-theft systems. P3			
Describe the process for software transfers, software updates, or flash reprogramming on electronic modules. P3			
<b>Total NATEF Tasks Completed</b>			P1____ P2____ P3____

Students taking Auto 122 will take the ASE student A6 test to access the student learning outcomes. Auto 127 is a performance based course. Students will perform NATEF tasks designed by the instructor and department to access their abilities to work independently. Many of the NATEF tasks can be demonstrated by the instructor during lectures using live vehicle demonstrations.

Cuyamaca College NATEF Task Documentation Form by Class and Instructor. The instructor will provide a task artifact documenting each students' performance. Required NATEF tasks are required to be documented in the syllabus. NATEF MASTER Program. Each student is required to have this form signed by the instructor. Please send 2 student artifacts including samples of all of their work by electronic file.

95% of all Priority 1 (P-1) tasks must be taught (34 Tasks)

80% of all Priority 2 (P-2) tasks must be taught (12 Tasks)

50% of all Priority 3 (P-3) tasks must be taught (11 Tasks)

AT 130 and 135 Brakes and Advanced Brakes

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N
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<p>Identify and interpret brake system concerns; determine necessary action. P1</p>			
<p>Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. P1</p>			
<p>Describe procedure for performing a road test to check brake system operation; including an anti-lock brake system (ABS). P1</p>			
<p>Install wheel and torque lug nuts. P1</p>			
<p>Diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law). P1</p>			
<p>Measure brake pedal height, travel, and free play (as applicable); determine necessary action. P1</p>			

<p>Check master cylinder for internal/external leaks and proper operation; determine necessary action. P1</p>			
<p>Remove, bench bleed, and reinstall master cylinder. P1</p>			
<p>Diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system; determine necessary action. P3</p>			
<p>Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, and wear; check for loose fittings and supports; determine necessary action. P1</p>			
<p>Replace brake lines, hoses, fittings, and supports. P2</p>			
<p>Fabricate brake lines using proper material and flaring procedures (double flare and ISO types). P2</p>			

<p>Select, handle, store, and fill brake fluids to proper level. P1</p>			
<p>Inspect, test, and/or replace components of brake warning light system. P3</p>			
<p>Identify components of brake warning light system. P2</p>			
<p>Bleed and/or flush brake system. P1</p>			
<p>Test brake fluid for contamination. P1</p>			
<p>Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action. P1</p>			

<p>Remove, clean, inspect, and measure brake drum diameter; determine necessary action. P1</p>			
<p>Refinish brake drum and measure final drum diameter; compare with specifications. P1</p>			
<p>Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble. P1</p>			
<p>Inspect wheel cylinders for leaks and proper operation; remove and replace as needed. P2</p>			
<p>Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings; perform final checks and adjustments. P2</p>			
<p>Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging, or pulsation concerns; determine necessary action. P1</p>			

<p>Remove and clean caliper assembly; inspect for leaks and damage/wear to caliper housing; determine necessary action. P1</p>			
<p>Clean and inspect caliper mounting and slides/pins for proper operation, wear, and damage; determine necessary action. P1</p>			
<p>Remove, inspect, and replace pads and retaining hardware; determine necessary action. P1</p>			
<p>Lubricate and reinstall caliper, pads, and related hardware; seat pads and inspect for leaks. P1</p>			
<p>Clean and inspect rotor; measure rotor thickness, thickness variation, and lateral runout; determine necessary action. P1</p>			
<p>Remove and reinstall rotor. P1</p>			



<p>Refinish rotor on vehicle; measure final rotor thickness and compare with specifications. P1</p>			
<p>Refinish rotor off vehicle; measure final rotor thickness and compare with specifications. P1</p>			
<p>Retract and re-adjust caliper piston on an integrated parking brake system. P3</p>			
<p>Check brake pad wear indicator; determine necessary action. P2</p>			
<p>Describe importance of operating vehicle to burnish/break-in replacement brake pads according to manufacturer's recommendations. P1</p>			
<p>Check brake pedal travel with, and without, engine running to verify proper power booster operation. P2</p>			

<p>Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster. P1</p>			
<p>Inspect vacuum-type power booster unit for leaks; inspect the check-valve for proper operation; determine necessary action. P1</p>			
<p>Inspect and test hydraulically-assisted power brake system for leaks and proper operation; determine necessary action. P3</p>			
<p>Measure and adjust master cylinder pushrod length. P3</p>			
<p>Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine necessary action. P3</p>			
<p>Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings. P1</p>			

<p>Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed. P2</p>			
<p>Check parking brake operation and parking brake indicator light system operation; determine necessary action. P1</p>			
<p>Check operation of brake stop light system. P1</p>			
<p>Replace wheel bearing and race. P2</p>			
<p>Remove and reinstall sealed wheel bearing assembly. P2</p>			
<p>Inspect and replace wheel studs. P1</p>			
<p>Identify and inspect electronic brake control system components; determine necessary action. P1</p>			

<p>Identify traction control/vehicle stability control system components. P3</p>			
<p>Describe the operation of a regenerative braking system. P3</p>			
<p>Diagnose poor stopping, wheel lock-up, abnormal pedal feel, unwanted application, and noise concerns associated with the electronic brake control system; determine necessary action. P2</p>			
<p>Diagnose electronic brake control system electronic control(s) and components by retrieving diagnostic trouble codes, and/or using recommended test equipment; determine necessary action. P2</p>			
<p>Depressurize high-pressure components of an electronic brake control system. P3</p>			

<p>Bleed the electronic brake control system hydraulic circuits. P1</p>			
<p>Test, diagnose, and service electronic brake control system speed sensors (digital and analog), toothed ring (tone wheel), and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO) (includes output signal, resistance, shorts to voltage/ground, and frequency data). P3</p>			
<p>Diagnose electronic brake control system braking concerns caused by vehicle modifications (tire size, curb height, final drive ratio, etc.). P3</p>			
<p>Total NATEF Tasks Completed</p>			<p><b>P1</b> _____ <b>P2</b> _____ <b>P3</b> _____</p>

Students taking Auto 130 and 135 will use the student ASE A6 test for student learning outcome evaluation. Auto 135 is designed to test students' ability to work independently on specific projects designed by the department or instructor.

**Cuyamaca College NATEF Task Documentation Form by Class and Instructor. The instructor will provide a task artifact documenting each students' performance. Required NATEF tasks are required to be documented in the syllabus. NATEF MASTER Program. Each student is required to have this form signed by the instructor. Please send 2 student artifacts including samples of all of their work by electronic file.**

95% of all Priority 1 (P-1) tasks must be taught (23 Tasks)

80% of all Priority 2 (P-2) tasks must be taught (22 Tasks)

50% of all Priority 3 (P-3) tasks must be taught (12 Tasks)

**AT 140 and 145 Suspension and Steering**

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N
Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. <b>P1</b>			
Identify and interpret suspension and steering system concerns; determine necessary action. <b>P1</b>			
Disable and enable supplemental restraint system (SRS). <b>P1</b>			
Remove and replace steering wheel; center/time supplemental restraint system (SRS) coil (clock spring). <b>P1</b>			
Diagnose steering column noises, looseness, and binding concerns (including tilt mechanisms); determine necessary action. <b>P2</b>			

<p>Diagnose power steering gear (non-rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine necessary action. <b>P2</b></p>			
<p>Diagnose power steering gear (rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine necessary action. <b>P2</b></p>			
<p>Inspect steering shaft universal-joint(s), flexible coupling(s), collapsible column, lock cylinder mechanism, and steering wheel; perform necessary action. <b>P2</b></p>			
<p>Remove and replace rack and pinion steering gear; inspect mounting bushings and brackets. <b>P2</b></p>			
<p>Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots; replace as needed. <b>P2</b></p>			

Determine proper power steering fluid type; inspect fluid level and condition. <b>P1</b>			
Flush, fill, and bleed power steering system. <b>P2</b>			
Inspect for power steering fluid leakage; determine necessary action. <b>P1</b>			
Remove, inspect, replace, and adjust power steering pump drive belt. <b>P1</b>			
Remove and reinstall power steering pump. <b>P2</b>			
Remove and reinstall press fit power steering pump pulley; check pulley and belt alignment. <b>P2</b>			
Inspect and replace power steering hoses and fittings. <b>P2</b>			



<p>Inspect and replace pitman arm, relay (center-link/intermediate) rod, idler arm and mountings, and steering linkage damper. <b>P2</b></p>			
<p>Inspect, replace, and adjust tie rod ends (sockets), tie rod sleeves, and clamps. <b>P1</b></p>			
<p>Test and diagnose components of electronically-controlled steering systems using a scan tool; determine necessary action. <b>P3</b></p>			
<p>Identify hybrid vehicle power steering system electrical circuits and safety precautions. <b>P2</b></p>			
<p>Inspect electric power-assisted steering. <b>P3</b></p>			
<p>Diagnose short and long arm suspension system noises, body sway, and uneven ride height concerns; determine necessary action. <b>P1</b></p>			

<p>Diagnose strut suspension system noises, body sway, and uneven ride height concerns; determine necessary action.</p> <p><b>P1</b></p>			
<p>Inspect, remove and install upper and lower control arms, bushings, shafts, and rebound bumpers.</p> <p><b>P3</b></p>			
<p>Inspect, remove and install strut rods and bushings.</p> <p><b>P3</b></p>			
<p>Inspect, remove and install upper and/or lower ball joints (with or without wear indicators).</p> <p><b>P2</b></p>			
<p>Inspect, remove and install steering knuckle assemblies.</p> <p><b>P3</b></p>			
<p>Inspect, remove and install short and long arm suspension system coil springs and spring insulators.</p> <p><b>P3</b></p>			

<p>Inspect, remove and install torsion bars and mounts <b>P3</b></p>			
<p>Inspect, remove and install front stabilizer bar (sway bar) bushings, brackets, and links. <b>P3</b></p>			
<p>Inspect, remove and install strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount. <b>P3</b></p>			
<p>Inspect, remove and install track bar, strut rods/radius arms, and related mounts and bushings. <b>P3</b></p>			
<p>Inspect rear suspension system leaf spring(s), bushings, center pins/bolts, and mounts. <b>P1</b></p>			
<p>Inspect, remove, and replace shock absorbers; inspect mounts and bushings. <b>P1</b></p>			

<p>Remove, inspect, and service or replace front and rear wheel bearings. <b>P1</b></p>			
<p>Describe the function of the power steering pressure switch. <b>P3</b></p>			
<p>Diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine necessary action. <b>P1</b></p>			
<p>Perform pre-alignment inspection and measure vehicle ride height; perform necessary action. <b>P1</b></p>			
<p>Prepare vehicle for wheel alignment on alignment machine; perform four-wheel alignment by checking and adjusting front and rear wheel caster, camber and toe as required; center steering wheel. <b>P1</b></p>			
<p>Check toe-out-on-turns (turning radius); determine necessary action. <b>P2</b></p>			

<p>Check SAI (steering axis inclination) and included angle; determine necessary action. <b>P2</b></p>			
<p>Check rear wheel thrust angle; determine necessary action. <b>P1</b></p>			
<p>Check for front wheel setback; determine necessary action. <b>P2</b></p>			
<p>Check front and/or rear cradle (sub-frame) alignment; determine necessary action. <b>P3</b></p>			
<p>Reset steering angle sensor <b>P2</b></p>			
<p>Inspect tire condition; identify tire wear patterns; check for correct tire size and application (load and speed ratings) and adjust air pressure; determine necessary action. <b>P1</b></p>			
<p>Diagnose wheel/tire vibration, shimmy, and noise; determine necessary action. <b>P2</b></p>			

<p>Rotate tires according to manufacturer's recommendations.  <b>P1</b></p>			
<p>Measure wheel, tire, axle flange, and hub runout; determine necessary action.  <b>P2</b></p>			
<p>Diagnose tire pull problems; determine necessary action.  <b>P2</b></p>			
<p>Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic).  <b>P1</b></p>			
<p>Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor.  <b>P2</b></p>			
<p>Inspect tire and wheel assembly for air loss; perform necessary action.  <b>P1</b></p>			
<p>Repair tire using internal patch.  <b>P1</b></p>			

Identify and test tire pressure monitoring system (indirect and direct) for operation; calibrate system; verify operation of instrument panel lamps. <b>P2</b>			
Demonstrate knowledge of steps required to remove and replace sensors in a tire pressure monitoring system. <b>P1</b>			
Total NATEF Tasks Completed			<b>P1</b> _____ <b>P2</b> _____ <b>P3</b> _____

Students will be assessed by taking the department ASE A4 student test. Advanced students will perform special projects designed by the instructor and the department.

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95% of all Priority 1 (P-1) tasks must be taught (27 Tasks)

80% of all Priority 2 (P-2) tasks must be taught (13 Tasks)

50% of all Priority 3 (P-3) tasks must be taught (9 Tasks)

**AT 152 – Drive Train Systems**

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N
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<p>Identify and interpret transmission/transaxle concern, differentiate between engine performance and transmission/transaxle concerns; determine necessary action. <b>P1</b></p>			
<p>Research applicable vehicle and service information fluid type, vehicle service history, service precautions, and technical service bulletins. <b>P1</b></p>			
<p>Diagnose fluid loss and condition concerns; determine necessary action. <b>P1</b></p>			
<p>Check fluid level in a transmission or a transaxle equipped with a dipstick. <b>P1</b></p>			
<p>Check fluid level in a transmission or a transaxle not equipped with a dipstick. <b>P1</b></p>			
<p>Perform stall test; determine necessary action. <b>P3</b></p>			
<p>Perform lock-up converter system tests; determine necessary action. <b>P3</b></p>			



<p>Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, driven, and held member (power flow) principles. <b>P1</b></p>			
<p>Diagnose pressure concerns in a transmission using hydraulic principles (Pascal's Law). <b>P2</b></p>			
<p>Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch. <b>P2</b></p>			
<p>Inspect for leakage; replace external seals, gaskets, and bushings. <b>P2</b></p>			
<p>Inspect, test, adjust, repair, or replace electrical/electronic components and circuits including computers, solenoids, sensors, relays, terminals, connectors, switches, and harnesses. <b>P1</b></p>			
<p>Drain and replace fluid and filter(s). <b>P1</b></p>			
<p>Inspect, replace and align power train mounts. <b>P2</b></p>			

<p>Remove and reinstall transmission/transaxle and torque converter; inspect engine core plugs, rear crankshaft seal, dowel pins, dowel pin holes, and mating surfaces. <b>P1</b></p>			
<p>Inspect, leak test, and flush or replace transmission/transaxle oil cooler, lines, and fittings. <b>P1</b></p>			
<p>Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore. <b>P2</b></p>			
<p>Describe the operational characteristics of a continuously variable transmission (CVT). <b>P3</b></p>			
<p>Describe the operational characteristics of a hybrid vehicle drive train. <b>P3</b></p>			
<p>MANUAL</p>			
<p>Identify and interpret drive train concerns; determine necessary action. <b>P1</b></p>			

<p>Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins. <b>P1</b></p>			
<p>Check fluid condition; check for leaks; determine necessary action. <b>P1</b></p>			
<p>Drain and refill manual transmission/transaxle and final drive unit. <b>P1</b></p>			
<p>Diagnose clutch noise, binding, slippage, pulsation, and chatter; determine necessary action. <b>P1</b></p>			
<p>Inspect clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, and springs; perform necessary action. <b>P1</b></p>			
<p>Inspect and replace clutch pressure plate assembly, clutch disc, release (throw-out) bearing and linkage, and pilot bearing/bushing (as applicable). <b>P1</b></p>			

<p>Bleed clutch hydraulic system. <b>P1</b></p>			
<p>Check and adjust clutch master cylinder fluid level; check for leaks. <b>P1</b></p>			
<p>Inspect flywheel and ring gear for wear and cracks; determine necessary action. <b>P1</b></p>			
<p>Measure flywheel runout and crankshaft end play; determine necessary action. <b>P2</b></p>			
<p>Inspect, adjust, and reinstall shift linkages, brackets, bushings, cables, pivots, and levers. <b>P2</b></p>			
<p>Describe the operational characteristics of an electronically-controlled manual transmission/transaxle. <b>P3</b></p>			
<p>Diagnose constant-velocity (CV) joint noise and vibration concerns; determine necessary action. <b>P1</b></p>			

<p>Diagnose universal joint noise and vibration concerns; perform necessary action.  <b>P2</b></p>			
<p>Inspect, remove, and replace front wheel drive (FWD) bearings, hubs, and seals.  <b>P1</b></p>			
<p>Inspect, service, and replace shafts, yokes, boots, and universal/CV joints.  <b>P1</b></p>			
<p>Check shaft balance and phasing; measure shaft runout; measure and adjust driveline angles.  <b>P2</b></p>			
<p>Clean and inspect differential housing; check for leaks; inspect housing vent.  <b>P2</b></p>			
<p>Check and adjust differential housing fluid level.  <b>P1</b></p>			
<p>Drain and refill differential housing.  <b>P1</b></p>			

<p>Inspect and replace companion flange and pinion seal; measure companion flange runout. <b>P2</b></p>			
<p>Inspect and replace drive axle wheel studs. <b>P1</b></p>			
<p>Remove and replace drive axle shafts. <b>P1</b></p>			
<p>Inspect and replace drive axle shaft seals, bearings, and retainers. <b>P2</b></p>			
<p>Measure drive axle flange runout and shaft end play; determine necessary action. <b>P2</b></p>			
<p>Inspect, adjust, and repair shifting controls (mechanical, electrical, and vacuum), bushings, mounts, levers, and brackets. <b>P3</b></p>			

Inspect front-wheel bearings and locking hubs; perform necessary action(s). <b>P3</b>			
Check for leaks at drive assembly seals; check vents; check lube level. <b>P3</b>			
Identify concerns related to variations in tire circumference and/or final drive ratios. <b>P3</b>			
Total NATEF Tasks Completed			<b>P1</b> _____ <b>P2</b> _____ <b>P3</b> _____

Student learning outcomes will be assessed using the ASE student A2 Automatic Transmission and Transaxle and A3 Manual Drivetrain and Axles tests.

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95% of all Priority 1 (P-1) tasks must be taught (17 Tasks)

80% of all Priority 2 (P-2) tasks must be taught (17 Tasks)

50% of all Priority 3 (P-3) tasks must be taught (4 Tasks)

**AT 160 and 165 Automotive Climate Control and Advanced Climate Control Systems**

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N	TASK
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Identify and interpret heating and air conditioning problems; determine necessary action. <b>P1</b>				<b>AT 160/165- Job 1</b>
Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. <b>P1</b>				<b>Job 2</b>
Performance test A/C system; identify problems. <b>P1</b>				<b>Job 3</b>
Identify abnormal operating noises in the A/C system; determine necessary action. <b>P2</b>				
Identify refrigerant type; select and connect proper gauge set; record temperature and pressure readings. <b>P1</b>				
Leak test A/C system; determine necessary action. <b>P1</b>				



<p>Inspect condition of refrigerant oil removed from A/C system; determine necessary action. <b>P2</b></p>				
<p>Determine recommended oil and oil capacity for system application. <b>P1</b></p>				
<p>Using a scan tool, observe and record related HVAC data and trouble codes. <b>P3</b></p>				
<p>Inspect and replace A/C compressor drive belts, pulleys, and tensioners; determine necessary action. <b>P1</b></p>				
<p>Inspect, test, service or replace A/C compressor clutch components and/or assembly; check compressor clutch air gap; adjust as needed. <b>P2</b></p>				
<p>Remove, inspect, and reinstall A/C compressor and mountings; determine recommended oil quantity. <b>P2</b></p>				

<p>Identify hybrid vehicle A/C system electrical circuits and service/safety precautions. <b>P2</b></p>				
<p>Determine need for an additional A/C system filter; perform necessary action. <b>P3</b></p>				
<p>Remove and inspect A/C system mufflers, hoses, lines, fittings, O-rings, seals, and service valves; perform necessary action. <b>P2</b></p>				
<p>Inspect A/C condenser for airflow restrictions; perform necessary action. <b>P1</b></p>				
<p>Remove, inspect, and reinstall receiver/drier or accumulator/drier; determine recommended oil quantity. <b>P2</b></p>				
<p>Remove, inspect, and install expansion valve or orifice (expansion) tube. <b>P1</b></p>				
<p>Inspect evaporator housing water drain; perform necessary action. <b>P1</b></p>				

<p>Diagnose A/C system conditions that cause the protection devices (pressure, thermal, and PCM) to interrupt system operation; determine necessary action. <b>P2</b></p>				
<p>Determine procedure to remove and reinstall evaporator; determine required oil quantity. <b>P2</b></p>				
<p>Remove, inspect, and reinstall condenser; determine required oil quantity. <b>P2</b></p>				
<p>Inspect engine cooling and heater systems hoses; perform necessary action. <b>P1</b></p>				
<p>Inspect and test heater control valve(s); perform necessary action. <b>P2</b></p>				
<p>Diagnose temperature control problems in the heater/ventilation system; determine necessary action. <b>P2</b></p>				

<p>Determine procedure to remove, inspect, and reinstall heater core. <b>P2</b></p>				
<p>Inspect and test A/C-heater blower motors, resistors, switches, relays, wiring, and protection devices; perform necessary action. <b>P1</b></p>				
<p>Diagnose A/C compressor clutch control systems; determine necessary action. <b>P2</b></p>				
<p>Diagnose malfunctions in the vacuum, mechanical, and electrical components and controls of the heating, ventilation, and A/C (HVAC) system; determine necessary action. <b>P2</b></p>				
<p>Inspect and test A/C-heater control panel assembly; determine necessary action. <b>P3</b></p>				

<p>Inspect and test A/C-heater control cables, motors, and linkages; perform necessary action. <b>P3</b></p>				
<p>Inspect A/C-heater ducts, doors, hoses, cabin filters, and outlets; perform necessary action. <b>P1</b></p>				
<p>Identify the source of A/C system odors. <b>P2</b></p>				
<p>Check operation of automatic or semi-automatic heating, ventilation, and air-conditioning (HVAC) control systems; determine necessary action. <b>P2</b></p>				
<p>Perform correct use and maintenance of refrigerant handling equipment according to equipment manufacturer's standards. <b>P1</b></p>				
<p>Identify and recover A/C system refrigerant. <b>P1</b></p>				

Recycle, label, and store refrigerant. <b>P1</b>				
Evacuate and charge A/C system; add refrigerant oil as required. <b>P1</b>				
Total NATEF Tasks Completed			P1 _____ P2 _____ P3 _____	

The student ASE A7 test Heating and Air Conditioning will be used to assess student learning outcomes.

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95% of all Priority 1 (P-1) tasks must be taught (23 Tasks)

80% of all Priority 2 (P-2) tasks must be taught (17 Tasks)

50% of all Priority 3 (P-3) tasks must be taught (11 Tasks)

**AT 170 and 175 Engine Repair**

Student Name \_\_\_\_\_ Term \_\_\_\_\_ Year \_\_\_\_\_

NATEF TASK	Instructor Signature	Date	Complete Y/N
Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. <b>P1</b>			

<p>Research applicable vehicle and service information, such as internal engine operation, vehicle service history, service precautions, and technical service bulletins. P1</p>			
<p>Verify operation of the instrument panel engine warning indicators. P1</p>			
<p>Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action. P1</p>			
<p>Install engine covers using gaskets, seals, and sealers as required. P1</p>			
<p>Remove and replace timing belt; verify correct camshaft timing. P1</p>			
<p>Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert. P1</p>			

<p>Inspect, remove and replace engine mounts. P2</p>			
<p>Identify hybrid vehicle internal combustion engine service precautions. P3</p>			
<p>Remove and reinstall engine in an OBDII or newer vehicle; reconnect all attaching components and restore the vehicle to running condition. P3</p>			
<p>Remove cylinder head; inspect gasket condition; install cylinder head and gasket; tighten according to manufacturer's specifications and procedures. P1</p>			
<p>Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition. P1</p>			



<p>Inspect pushrods, rocker arms, rocker arm pivots and shafts for wear, bending, cracks, looseness, and blocked oil passages (orifices); determine necessary action. P2</p>			
<p>Adjust valves (mechanical or hydraulic lifters). P1</p>			
<p>Inspect and replace camshaft and drive belt/chain; includes checking drive gear wear and backlash, end play, sprocket and chain wear, overhead cam drive sprocket(s), drive belt(s), belt tension, tensioners, camshaft reluctor ring/tone-wheel, and valve timing components; verify correct camshaft timing. P1</p>			
<p>Establish camshaft position sensor indexing. P1</p>			
<p><b>Inspect valve springs for squareness and free height comparison; determine necessary action.</b> P3</p>			

<p><b>Replace valve stem seals on an assembled engine; inspect valve spring retainers, locks/keepers, and valve lock/keeper grooves; determine necessary action.</b> P3</p>			
<p><b>Inspect valve guides for wear; check valve stem-to-guide clearance; determine necessary action.</b> P3</p>			
<p><b>Inspect valves and valve seats; determine necessary action.</b> P3</p>			
<p><b>Check valve spring assembled height and valve stem height; determine necessary action.</b> P3</p>			
<p><b>Inspect valve lifters; determine necessary action.</b> P2</p>			

<p><b>Inspect and/or measure camshaft for runout, journal wear and lobe wear.</b> P2</p>			
<p><b>Inspect camshaft bearing surface for wear, damage, out-of-round, and alignment; determine necessary action.</b> P3</p>			
<p>Remove, inspect, or replace crankshaft vibration damper (harmonic balancer). P2</p>			
<p><b>Disassemble engine block; clean and prepare components for inspection and reassembly.</b> P1</p>			
<p><b>Inspect engine block for visible cracks, passage condition, core and gallery plug condition, and surface warpage; determine necessary action.</b> P2</p>			

<p><b>Inspect and measure cylinder walls/sleeves for damage, wear, and ridges; determine necessary action.</b> P2</p>			
<p><b>Deglaze and clean cylinder walls.</b> P2</p>			
<p><b>Inspect and measure camshaft bearings for wear, damage, out-of-round, and alignment; determine necessary action.</b> P3</p>			
<p><b>Inspect crankshaft for straightness, journal damage, keyway damage, thrust flange and sealing surface condition, and visual surface cracks; check oil passage condition; measure end play and journal wear; check crankshaft position sensor reluctor ring (where applicable); determine necessary action.</b> P1</p>			
<p><b>Inspect main and connecting rod bearings for damage and wear; determine necessary action.</b> P2</p>			

<p><b>Identify piston and bearing wear patterns that indicate connecting rod alignment and main bearing bore problems; determine necessary action.</b> P3</p>			
<p><b>Inspect and measure piston skirts and ring lands; determine necessary action.</b> P2</p>			
<p><b>Determine piston-to-bore clearance.</b> P2</p>			
<p><b>Inspect, measure, and install piston rings.</b> P2</p>			
<p><b>Inspect auxiliary shaft(s) (balance, intermediate, idler, counterbalance or silencer); inspect shaft(s) and support bearings for damage and wear; determine necessary action; reinstall and time.</b> P2</p>			
<p><b>Assemble engine block.</b> P1</p>			

<p>Perform cooling system pressure and dye tests to identify leaks; check coolant condition and level; inspect and test radiator, pressure cap, coolant recovery tank, heater core and galley plugs; determine necessary action. P1</p>			
<p>Identify causes of engine overheating. P1</p>			
<p>Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment. P1</p>			
<p>Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required. P1</p>			
<p>Inspect, remove, and replace water pump. P2</p>			
<p>Remove and replace radiator. P2</p>			
<p>Remove, inspect, and replace thermostat and gasket/seal. P1</p>			

<p>Inspect and test fan(s) (electrical or mechanical), fan clutch, fan shroud, and air dams. P1</p>			
<p>Perform oil pressure tests; determine necessary action. P1</p>			
<p>Perform engine oil and filter change. P1</p>			
<p>Inspect auxiliary coolers; determine necessary action. P3</p>			
<p>Inspect, test, and replace oil temperature and pressure switches and sensors. P2</p>			
<p>Inspect oil pump gears or rotors, housing, pressure relief devices, and pump drive; perform necessary action. P2</p>			

Total NATEF Tasks Completed			<b>P1</b> _____ <b>P2</b> _____ <b>P3</b> _____
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Students learning objectives will be assessed using the ASE student A1 Engine Repair exam.  
Advanced students taking AT 175 will perform projects designed by the instructor and department.



# ASCCA STUDENT WORK EXPERIENCE EVALUATION FORM

Evaluator Name \_\_\_\_\_ DATE \_\_\_\_\_

Student Name \_\_\_\_\_

Select the box that most accurately describes the trainee progress in each area. **Grade A**    **B**    **C**    **D**

<b>MENTOR TECHNICIAN EVALUATION OF STUDENT PERFORMANCE</b>	<b>4 Always</b>	<b>3 Usually</b>	<b>2 Rarely</b>	<b>1 Never</b>
The student reads the service information prior to asking for help. The student attempts to follow industry procedures by reading about them.				
The student checks for Technical Bulletins and Service Messages for information.				
The student uses the proper tools for the job and is learning how to use them correctly and safely.				
The student is clean, and makes sure that the car is cleaner than prior to work. All trim, fasteners, lugs, and floor mat are restored properly.				
The student is persistent, and is willing to work on a job until the job is completed to industry standards.				
The student takes care to not break tools, equipment, or components on the car being serviced.				
The student comes to work early, and is prepared to begin working at the moment the time clock starts. The student is never late or absent.				
The student dresses appropriately to represent the business, acts professionally, uses collegial language, and respects others.				
The student inspects vehicles and reports maintenance opportunities and unsafe conditions that can be upsold.				
The student is willing to do any type of repair work assigned and is not afraid to learn new things.				
The student uses a logical approach and wants to fix the car correctly avoiding comebacks.				
The student is able to cope with new and unusual problems, and not use the excuse that the problem has never been experienced before.				
The student completes the job until it is completed. The student seeks a new job immediately after completing the assigned job.				
The student displays a sense of urgency and is concerned about business production.				
The student reports unsafe conditions around the work area immediately, and has suggested ways to improve safety conditions.				
The student is eager to learn about new technologies and is actively engaged with the mentor technician. The student wants to know how and why things work.				
Rate the students overall level of productivity based the student's level of training and experience in the program.				
<b>Total Points out of 68 possible = _____</b>				



## Record Book Evaluation Form

### Record Book Evaluation Points

The Record Book is with the student all of the time and it is filled out daily and kept up to date.	_____ out of 25
The Record Book is neat and legible.	_____ out of 25
The attendance and time sheet is up to date.	_____ out of 25
All repair information is present supporting including supporting artifacts.	_____ out of 25
Flat Rate time and codes are completed.	_____ out of 25
<b>Total Points out of 125 possible:</b>	_____ out of 125

Student Name \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

Evaluator Name \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

# Competencies Record Book Evaluation Form. Student Readiness

Competent ability to perform work in a business environment is critical for student success. The ASCCA program is based on the national competency standards (NATEF). A student should document competencies throughout the program. Competencies may be performed and evaluated during instructional classes on campus. However, we believe most competencies should be evaluated by the mentoring technician and ASCCA coordinator using observations from work experience. This form should be completed with the ASCCA college coordinator.

Content Area	Estimate Work Experience Hours completed	Scale 4, 3, 2, 1 Grade A, B, C, D
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Hours Completed? Y/N	<b>Ready to work with moderate supervision.</b> <b>4</b>	Student needs more experience but is progressing. 3	Just beginning needs a lot more practice. 2	Student may have limited abilities and needs limited assignments. 1
NATEF Tasks Completed? Y/N				

Content Area	Hours	NATEF	4	3	2	1
<b>A1 Engine Repair</b>						
<b>A2 Automatic Transmission</b>						
<b>A3 4WD, Differential, Manual</b>						
<b>A4 Suspension and Steering</b>						
<b>A5 Brakes</b>						
<b>A6 Electrical and Electronics</b>						
<b>A7 Climate Control</b>						
<b>A8 Engine Performance</b>						

Student Name \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

Evaluator Name \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

College Coordinator \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

Mentor Technician Comments

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(Mentor Signature)

Service Manager's Comments

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(Service Manager's Signature)

Instructor's Comments

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(Instructor's Signature)

Students Comments

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(Student's Signature)











