

ASE PROGRAM CERTIFICATION STANDARDS

Automobile General Service Technician

Administered By:

National Automotive Technicians Education Foundation (NATEF)
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FOR
GENERAL SERVICE TECHNICIAN PROGRAMS

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POLICIES

GENERAL SERVICE TECHNICIAN CERTIFICATION PROGRAM

The General Service Technician Program was developed as an *additional option* for articulated certification, intended to serve secondary programs in areas where the local employers prefer to hire graduates who have a broad skill set and general understanding of all automotive systems rather than skill sets with greater depth in fewer automotive systems. The input and advice of each school's program advisory committee is critical to the decision about which certification option is most appropriate for that program and its students. In 2006 the General Service Technician Program was expanded to include programs at post-secondary schools.

The Board of the National Institute for Automotive Service Excellence (ASE) is the body responsible for the General Service Technician Certification Program. ASE will grant certification to programs that comply with the evaluation procedure, meet established standards, and adhere to the policies in this document.

The Certification Program is under the direct supervision of the Board of Trustees of the National Automotive Technicians Education Foundation (NATEF) and such personnel designated or employed by the Foundation.

The purpose of the General Service Technician Certification Program is to improve the quality of training offered at the secondary and post-secondary level. NATEF does not endorse specific curricular materials nor provide instruction to individuals, groups or institutions. It does, however, set national standards for the content of instruction, which includes tasks, tools and equipment, hours, and instructor qualifications.

The Program is a certification program only and is not associated with the accreditation role of other agencies.

The cost to each program for certification will be as reasonable as possible to encourage program participation. This cost will include self-evaluation materials, application (processing) fee, on-site team evaluation materials, and the honorarium and expenses of the Evaluation Team Leader (ETL).

For General Service Technician Program application documents, please order an automobile certification manual.

CERTIFICATION PROCESS

Program Self-Evaluation

The certification process begins with an extensive self-evaluation performed by training program instructors, administrators, and advisory committee members. Members of this group compare the program to national standards, and have the opportunity to make improvements before submitting evaluation documents to NATEF.

NATEF Review

Self-evaluation materials are then sent to NATEF, where they are reviewed to determine if the program qualifies for an on-site team evaluation.

On-Site Evaluation

If the program qualifies, an Evaluation Team Leader (ETL), an educator certified by ASE and trained by NATEF, is assigned to the program and an on-site visit is conducted.

Recommendation for Certification

When industry requirements are met, the program will become certified for a period of five years.

Expired programs that have let their certification lapse for two or more years will be required to follow the procedures for initial certification when they apply for renewal of their certification.

Please note: Expired programs will be allowed to submit the 'recertification' forms versus 'initial' certification forms up to 18 months past their expiration date (applications for recertification submitted after 18 months of program expiration will be returned). Furthermore, expired programs must complete the entire recertification process within two years of their expiration date.

GENERAL SERVICE TECHNICIAN STANDARDS STATEMENTS

STANDARD 1 – PURPOSE

The General Service Technician Program should have clearly stated program goals, related to the needs of the students and employers served.

STANDARD 2 – ADMINISTRATION

Program administration should ensure that instructional activities support and promote the goals of the program.

STANDARD 3 – LEARNING RESOURCES

Support material, consistent with both program goals and performance objectives, should be available to staff and students.

STANDARD 4 – FINANCES

Funding should be provided to meet the program goals and performance objectives.

STANDARD 5 – STUDENT SERVICES

Systematic pre-admission testing, interviews, counseling services, placement, and follow-up procedures should be used.

STANDARD 6 – INSTRUCTION

Instruction must be systematic and reflect program goals. A task list and specific performance objectives with criterion-referenced measures must be used.

STANDARD 7 – EQUIPMENT

Equipment and tools used must be of the type and quality found in the repair industry and must also be the type needed to provide training to meet the program goals and performance objectives.

STANDARD 8 – FACILITIES

The physical facilities must be adequate to permit achievement of the program goals and performance objectives.

STANDARD 9 – INSTRUCTIONAL STAFF

The instructional staff must have technical competency and meet all state and local requirements for certification.

STANDARD 10 – COOPERATIVE AGREEMENTS

Written policies and procedures should be used for cooperative and apprenticeship training programs. (This applies to programs that offer cooperative/apprenticeship training.)

GENERAL SERVICE TECHNICIAN MINIMUM REQUIREMENTS

1. The minimum program requirements are identical for initial certification and for recertification.
2. A program providing instruction must have a minimum total of 500 hours of combined laboratory/shop (co-op) and classroom instruction.
3. **The average rating on each of Standards 6, 7, 8, and 9 must be a four** on the five-point scale. The program will not be approved for an on-site evaluation if the average is less than 4 on any of those standards. The program should make improvements before submitting the application to NATEF for review. **A program will be denied certification if the on-site evaluation team average on Standards 6, 7, 8, or 9 is less than four.**
4. A program may not be approved for an on-site evaluation if the average rating on Standards 1- 5 and 10 is less than a four on the five-point scale. **A program may be denied certification if the on-site evaluation team average on Standards 1 - 5 and 10 is less than four.** Approval for on-site evaluation or certification will be made by NATEF, based on the number of standards rated at 4 or 5 as well as the individual rating on any standard rated less than four.
5. All instructors must hold current ASE certification in Suspension & Steering (A4), Brakes (A5), Electrical/Electronic Systems (A6), and Engine Performance (A8).
6. All instructors must attend a minimum of 20 hours per year of recognized industry update training.
7. The program Advisory Committee must conduct at least two working meetings a year and have a minimum of 5 people (excluding school personnel) on the committee. Minutes of the meetings must be provided for review by the on-site evaluation team and must reflect relevant areas of the standards as having been considered by the Advisory Committee.
8. Programs must teach **all** (100%) of the tasks on the Task List.
9. All programs must have an Articulation Agreement with an ASE-certified Automobile Technician Training Program at the post-secondary level to encourage students to continue training after completing the General Service Technician Program.
10. The concern for safety is paramount to the learning environment. Each program must conform to the following safety requirement:

Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

INFORMATION ABOUT EVALUATION TEAM LEADERS (ETLs)

Evaluation Team Leaders (ETLs) are educators who have been trained by NATEF to lead the on-site evaluation. The NATEF office will assign an ETL once a program has been approved for an on-site evaluation. Every effort will be made to assign an ETL located close to the school to reduce the cost for the evaluation. Three additional team members, selected by the program and approved by the ETL, are required for a general service technician program on-site evaluation (see the following page for additional information about team members and on-site teams).

Persons selected as ETLs must:

1. have a minimum of six years of combined experience as an automobile technician and automobile instructor (at least three years experience as an automobile technician is required);
2. have a B.A. or B.S. in Education from a college or university recognized for teacher training by the state; and
3. be a current ASE-certified master automobile technician (A1-A8) credentials.

Or, if a state does not require automobile instructors to have a B.A. or B.S. degree, the following qualifications will apply:

1. six years experience as an automobile technician;
2. four years automobile teaching experience at the secondary or post-secondary level; and
3. current ASE-certified master automobile technician (A1-A8) credentials.

ETL candidates who are active instructors must be directly associated with a certified program. ETL candidates who are inactive instructors must have formerly been directly associated with a certified program.

ETL training is valid for three years. However, automatic three-year renewal is granted every time an ETL conducts an on-site evaluation. ETLs are required to attend additional training sessions or serve as a team member if they have not conducted an on-site evaluation within three years. This additional training is required even though the individual holds current ASE certification.

Anyone interested in becoming an Evaluation Team Leader should contact the NATEF office at (703) 669-6650 or their state Trade & Industrial Supervisor for more details.

INFORMATION ABOUT ON-SITE EVALUATION TEAMS

The program requesting certification is responsible for recruiting and recommending on-site evaluation team members. The ETL must approve individuals recommended by the program. The on-site evaluation team members must be practicing automobile technicians, service managers or shop owners from businesses in the area served by the training program. For initial certification only, one team member may be an automobile instructor from another school district/system*.

Team members must have:

1. a high school diploma or the equivalent (industry or military training may be considered as the equivalent), and
2. at least seven years full-time experience as a general automobile technician.

ASE automobile certification is recommended but not required.

* An automobile instructor from another school district/system must have a minimum total of seven years experience, which must include three or more years full-time experience as an automobile technician and three or more years of post high school training.

The **initial** certification evaluation team is composed of four individuals: the ETL and three team members. Two team members must be from industry (one from a dealership and one from an independent repair facility). The third member may be from one of the following: a dealership, an independent repair facility or an automobile training program.

The **recertification** evaluation team is composed of three individuals: the ETL and two team members. One team member must be from a dealership and one team member must be from an independent repair facility.

Each program requesting initial certification or recertification must identify their choices for evaluation team members on the On-Site Evaluation Team Member List. An alternate team member choice must be identified on the On-Site Evaluation Team Member List in the event that one of the team members is unable to conduct the on-site evaluation. **The alternate team member must be from either a dealership or from an independent repair facility.**

Team members must not be advisory committee members, former instructors, or graduates of the program within the past ten years.

TASK LIST INFORMATION

An essential element of any curriculum or training program is a valid task list. Instructors must use the General Service Technician Program task list to serve as a solid base for course of study outlines and to facilitate communication and articulation of their training program with other institutions.

It is NATEF policy that the task list developed by the National Institute for Automotive Service Excellence (ASE) serves as the basis for the NATEF task list. Panels of technical service experts from the automotive service industry and vocational education are called upon to develop and validate the ASE and NATEF task lists.

Additional information on the development of the NATEF task list can be found in the Task List section.

TOOLS AND EQUIPMENT INFORMATION

The basic hand tools and general lab/shop equipment that must be available for use in the general service technician program are listed in the Tools and Equipment section. The specialty tools and equipment that must be available are also listed in the Tools and Equipment section.

Although no brand names are listed, the equipment and tools must address the following programmatic issues:

1. Safety - Equipment and tools must have all shields, guards, and other safety devices in place, operable, and used.
2. Type and Quality - The tools and equipment used in a certified program must be of the type and quality found in industry. They must also be adequate and in sufficient quantity to meet the program goals and student performance objectives.
3. Consumable Supplies - Supplies should be in sufficient quantity to assure continuous instruction. Consumable supplies, such as solvents, sand paper, etc. are not listed.
4. Maintenance - A preventive maintenance schedule should be used to minimize equipment down time.
5. Replacement - A systematic schedule for replacement should be used to maintain up-to-date tools and equipment at industry and safety standards. Information gained from student program evaluations as well as advisory committee input should be used in the replacement process.
6. Inventory - An inventory system should be used to account for tools, equipment, parts, and supplies.
7. Parts Purchasing - A systematic parts purchasing system should be used - from work order to supplier.
8. Hand Tools - Each student should be encouraged to purchase a hand tool set during the period of instruction.
9. Storage - Adequate storage of tools should be provided. Space for storage of the students' hand tools should be provided.

GENERAL SERVICE TECHNICIAN PROGRAM EVALUATION

NATEF Standards for Initial Certification and Recertification are identical. Items in **bold** print in the General Service Technician Program Self-Evaluation materials are critical for certification. These items are:

- 2.5 A** Does the Advisory Committee convene a minimum of two working meetings per year?
- 5.5 F** Does the Advisory Committee review information from the annual follow-up procedure and provide input for modifications to the training program?
- 6.5 A** Does the program provide theory and “hands-on” training for 100% of the tasks on the task list?
- 6.5 B** Are the tools and equipment available for the tasks taught?
- 7.1 A** Rate the degree to which all shields, guards, and other safety devices are in place, operable, and used.
- 7.1 B** Rate the degree to which all students, instructors, and visitors wear safety glasses in the lab/shop area while lab is in session.
- 9.1 E** Do instructors hold current ASE certification in: A4, A5, A6, and A8?
- 9.3 B** Do instructors attend a minimum of 20 hours per year of recognized industry update training?

Additionally, programs must meet the 500 minimum total hour requirement.

Programs must be able to support a yes response for all eight items. **If these responses are not achieved, do not apply for certification at this time.**

In addition, an on-site evaluation will not be scheduled unless the average score on each of Standards 6, 7, 8, and 9 is at least a 4 on the General Service Technician Program Self-Evaluation. Please refer to the General Service Technician Program Requirements for more information.

Instructors must be ASE certified in Suspension & Steering (A4), Brakes (A5), Electrical/Electronic Systems (A6), and Engine Performance (A8). Please refer to item 5 on page 4.

NATEF POLICIES ON ARTICULATION AGREEMENTS

The General Service Technician Program was developed as an option for secondary programs that choose to certify as articulated programs. NATEF Trustees recognized that graduates from a General Service Technician Program would have the opportunity to learn skills valuable for employment immediately upon graduation from high school. In 2006 the General Service Technician Program was expanded to include programs at post-secondary schools. However, the Trustees further recognized that General Service Technician Program graduates should be encouraged to continue their training at an ASE-certified Automobile Technician Training Program (post-secondary). For this reason, articulation is **required** for all General Service Technician Programs.

Articulation agreements are intended to encourage, but cannot require, General Service Technician Program graduates to go on to post-secondary education. Financial and social considerations suggest that many graduates must seek employment upon graduation.

The articulation agreement must be in writing and approved by the administration of each institution. The agreement shall:

- a. Stipulate how credit* will be granted for successful completion of instruction. This should also include the criteria for evaluating successful completion.
- b. Describe procedures for applying for credit* at the post-secondary level for instruction received in the General Service Technician Program.

* Credit is defined as a form of recognition for work that has been completed. It includes, but is not limited to, granting: academic credit, advanced placement, task completion, etc.

**** A SIGNED COPY OF THE ARTICULATION AGREEMENT MUST BE SUBMITTED WITH THE SELF-EVALUATION MATERIALS. ****

The procedures are as follows:

- a. The Program will submit the self-evaluation materials along with a signed copy of the articulation agreement with an ASE certified post-secondary program.
- b. The on-site evaluation team members will only evaluate the materials from the program certifying as a General Service Technician Program.
- c. The ASE-certified Automobile Program (post-secondary) will NOT be required to be evaluated until that program is due to recertify.

RECOGNITION FOR CERTIFICATION

A program approved for certification/recertification will receive a plaque that bears the ASE seal, the school's name, and the expiration date of certification. A statement will read:

"THE INSTRUCTION, COURSE OF STUDY, FACILITIES, AND EQUIPMENT OF THIS INSTITUTION HAVE BEEN EVALUATED BY THE NATIONAL AUTOMOTIVE TECHNICIANS EDUCATION FOUNDATION AND MEET THE NATIONAL INSTITUTE FOR AUTOMOTIVE SERVICE EXCELLENCE STANDARDS OF QUALITY FOR THE TRAINING OF GENERAL AUTOMOBILE SERVICE TECHNICIANS IN THE FOLLOWING AREA:"

Institutions receiving ASE certification are encouraged to put the following statement on the graduate's diploma or certificate:

“The person holding this diploma has participated in a General Service Technician Program that was certified by the National Institute for Automotive Service Excellence.”

A screened ASE/NATEF logo may be overprinted with the above statement and placed on the graduate's diploma. A camera-ready logo is provided in the promotional materials a program receives upon certification.

Programs granted initial certification will also receive a 24"x30" sign indicating that the training program is ASE-certified.

INTEGRATED ACADEMIC SKILLS RECOGNITION

The NATEF Board of Trustees and the ASE Board of Directors has initiated a process to recognize ASE certified programs that are integrating academics and technical skills into the curricula. This effort should be a collaborative effort between the automotive instructors and the academic instructors in language arts, mathematics, and science.

ASE and NATEF will issue a certificate of excellence to those programs that provide documentation including, but not limited to, student assignments or activities, classroom/lab instructional materials, student performance records, and interviews with academic instructors.

Programs that wish to receive recognition must complete the Integrated Academic Skills Recognition form and return it with the application for certification or recertification. Documentation on integrated academic skills activities must be available for the ETL at the time of the on-site evaluation.

Programs may receive recognition in Language Arts, Mathematics, Science, or any combination of the three areas.

To purchase a copy of the *Integrated Academic Skills for Automobile Technicians* manual, please go to www.natef.org.

APPEALS AND ACTION FOR REVOCATION

APPEALS: PROGRAMS APPLYING FOR CERTIFICATION

A complaint received from any school concerning the procedures, evaluation or certification of the General Service Technician Program must be made in writing to the ASE office in Leesburg, VA. It will be immediately referred to the Grievance Examiner who will acknowledge receipt of the complaint in writing to the complainants. Thereafter, the Grievance Examiner will investigate the complaint and prepare a report. A copy of the report will be given to the complainants and to an Appeals Committee within thirty (30) days of the receipt of the complaint.

The Appeals Committee will review the findings and recommendations of the Grievance Examiner, together with the complaint and any data supplied in connection therewith. The Appeals Committee will be empowered to dismiss the matter or to initiate such action as it may deem appropriate.

If the complainants desire to review the Appeals Committee's evaluation, they may do so at the office of the Grievance Examiner in Leesburg, VA. However, they will not be permitted to make copies of the results.

ACTION FOR REVOCATION: ASE-CERTIFIED PROGRAMS

The Appeals Committee will also advise the ASE President of its judgments and recommendations for action in any cases of malpractice or misrepresentation involving the misuse of ASE certification for a General Service Technician Program. Upon receipt of a complaint alleging misuse or misrepresentation by a certified program, the Grievance Examiner will be notified. The Grievance Examiner will notify the parties against whom the complaint has been filed, in writing, indicating the alleged wrongdoing. The parties will be further advised that they may submit a written explanation concerning the circumstances of the complaint within thirty (30) days. After the Grievance Examiner has considered the complaint and received the explanation, if any, the Grievance Examiner will determine whether there is a reasonable basis for a possible wrongdoing. If the Grievance Examiner finds such a basis, the Grievance Examiner will inform the parties of the findings. At that time, the Grievance Examiner will inform the parties of their right to a hearing before the Appeals Committee. The parties will have fifteen (15) days to notify the Grievance Examiner, in writing, of their decision.

In the event the involved parties elect to be bound by the findings of the Grievance Examiner without a hearing, the Grievance Examiner will submit a written report with recommendations to the Chair of the Appeals Committee. This report will be submitted within sixty (60) days of the receipt of the waiver of a hearing. The Chair of the Appeals Committee will mail a copy of the Grievance Examiner's findings and recommendations to the parties. In the event that the involved parties elect to appear at a hearing, the Chair of the Appeals Committee will call a Board of Inquiry. This Board will consist of four ASE Board members, one from each of the following categories: Education, Public Interest, Service Employers, and Vehicle and Service Products Manufacturers. The Board of Inquiry will be convened in Leesburg, VA at a date and

time determined by the Chair. The Board will notify the involved parties, in writing, regarding the time and place of the hearing.

The Grievance Examiner will be responsible for investigating and presenting all matters pertinent to the alleged wrongdoing to the Board of Inquiry. The involved parties will be entitled to be at the hearings with or without counsel. The parties will be given an opportunity to present such evidence or testimony as they deem appropriate.

The Board of Inquiry will notify the Chair of the Appeals Committee of its findings and recommendations in writing within ten (10) days after the hearing is completed.

The Appeals Committee will review the findings and recommendations of either the Grievance Examiner if a hearing was waived, or the Board of Inquiry if a hearing was held. The Appeals Committee will determine if the record on the complaint supports a finding of conduct contrary to or in violation of reasonable practices. If two-thirds of the Appeals Committee so find, the Committee will recommend to the President of ASE appropriate sanctions or courses of action against the parties charged.

DEFINITIONS – EDUCATIONAL TERMS

1. **AREA(S)**: Relates to one or more of the following: (1) Automatic Transmission/Transaxle, (2) Brakes, (3) Electrical/Electronic Systems, (4) Engine Performance (including emission control systems), (5) Engine Repair, (6) Heating and Air Conditioning, (7) Manual Drive Train and Axles, (8) Suspension and Steering.
2. **ARTICULATION**: A formal written agreement, usually between a secondary and post-secondary institution that are geographically within a reasonable daily commuting distance of each other. The agreement will clearly denote that students completing specific secondary courses in accordance with predetermined performance criteria will have partially completed commensurate requirements for a completion certificate or diploma awarded by the post-secondary institution. Commensurate requirements could be in the form of credit equivalents, advanced placement, task completion, etc. at the post-secondary institution.
3. **CURRICULUM**: All the objectives of the lesson plan with respect to the content and learning activities, arranged in a sequence for a particular instructional area. An orderly arrangement of integrated subjects, activities, time allocations, and experiences that students pursue for the attainment of a specific educational goal.
4. **COMPETENCY**: (Hands-On) - Performance of task to the level or degree specified in the performance standard and curriculum for the task.
5. **COMPETENCY**: (Written) – Understanding of task to the level or degree specified in the performance standard and curriculum for the task.
6. **CRITERION-REFERENCED MEASURE(S)**: An exercise based on a performance objective for a task, and designed to measure attainment of that objective. (Also called performance test(s) or criterion-referenced test.)
7. **GOAL**: A statement of the intended outcome of participation in the training program.
8. **MASTERY**: (See Competency – Hands-On and Competency - Written).
9. **OBJECTIVE, PERFORMANCE**: A written statement describing an intended outcome (competent task performance) in terms of student performance. (Also called "behavioral" objective or instructional objective) R.F. Mager Associates, 13245 Rhoda Drive, Los Altos Hill, California.
10. **ON-VEHICLE SERVICE AND REPAIR WORK**: The processing, assignment and student performance of the appropriate tasks on vehicles donated by manufacturers or other sources, customer-owned, and other training vehicles.
11. **PERSONAL CHARACTERISTIC**: Attributes that are not readily measurable, and are generally in the affective or cognitive domains

12. STANDARD: "...Something established for use as a rule or basis of comparison in measuring or judging capacity, quantity, content, extent, value, quality, etc." Webster's New World Dictionary (1991)
13. STANDARD – (PERFORMANCE): A written specification of the results of acceptable task performance.
14. STANDARD – (PERSONAL): An attribute or characteristic of an individual that facilitates entry into, or advancement within an occupation.
15. STANDARD – (PROGRAM): A specific quality or desired characteristic of a training program designed to prepare individuals for employment or advancement.
16. TASK: A psychomotor or cognitive entry-level learning activity consisting of one or more measurable steps accomplished through an instructor presentation, demonstration, visualization or a student application.
17. TRAINING STATION: An area with appropriate tools and equipment, large enough to allow the development of both safety and competency in task performance.

Must or shall is an imperative need, duty or requirement; an essential or indispensable item; mandatory.

Should is used to express a recommendation, not mandatory but attainment would increase program quality.

May or could expresses freedom to follow a suggested alternative.

PROCEDURES FOR CERTIFICATION/RECERTIFICATION

Process Overview

NOTE: NATEF recommends that programs maintain a file containing copies of all reference and documentation materials developed during all phases of the certification process.

1. Purchase application materials

The program requesting certification must purchase self-evaluation materials from NATEF in Leesburg, VA. To begin the certification process, the program must return the following items from the evaluation materials packet:

- a. Application for Certification or Recertification
- b. Self-Evaluation Summary Sheet
- c. On-site Evaluation Team Member List
- d. Instructor Qualifications Forms
- e. Instructor Training Forms
- f. Advisory Committee List
- g. Articulation Agreement
- h. Applied Academics Recognition Forms (optional)
- i. Purchase Order, Check, or Credit Card Authorization for Application Fee and On-Site Evaluation Team Packets (self-evaluations will be returned if received without payment)

2. NATEF review of application

The national office will review the materials within 30 days. Following the review, the Program Administrator and the state Trade & Industrial Supervisor will be notified about the status of the program. The program will be identified as one of the following:

- a. Qualified for on-site evaluation.
- b. Not qualified for an on-site evaluation at that time. NATEF will indicate specific improvements that must be made before the on-site evaluation can be scheduled.

3. Evaluation Team Leader (ETL) assigned, Program Coordinator makes contact

NATEF will assign an Evaluation Team Leader (ETL) to the program. NATEF will send the program the Application for On-site Evaluation. With a legitimate reason, the Program Coordinator may contact the NATEF office to request a different ETL. A request for a different ETL must be in writing and specific as to the reason for the request. (The ETL assigned must NOT be a present or former teacher or administrator of the program to be evaluated.) The Program Coordinator must contact the ETL to arrange a date for the on-site evaluation.

The Application for the On-site Evaluation will be sent with instructions that outline the plans for the local administration and the costs for the ETL's services and expenses. All costs will be paid by the institution requesting certification.

4. Send on-site application, course of study, and list of on-site evaluation team members to ETL

The Application for On-site Evaluation, signed by the program administrator, must be sent to the ETL. A copy of the course of study and this application must be received by the ETL at least two weeks prior to the on-site evaluation or the on-site must be rescheduled. The course of study should include the following items:

- a. Syllabus and class schedule for each class
- b. Tasks and sequence of instruction
- c. Number of contact hours
- d. List of training materials and audio-visual materials used in training
- e. Sample evaluation form used to track student progress

The On-site Evaluation Team Member List must be included for the ETL to review and approve. Once a date has been set and the on-site evaluation team members have been approved by the ETL, the program coordinator must contact the on-site evaluation team members to make arrangements for the evaluation day(s).

5. On-site evaluation

Initial certification requires 2 consecutive days while students are in class for the on-site evaluation review of all the standards.

Recertification requires a 1-day on-site evaluation while students are in class. The on-site evaluation team reviews Standards 6-9 as well as all go/no-go (critical) items. However, if the Advisory Committee average on Standards 1-5 or Standard 10 is less than 4, the on-site evaluation team must also review these standards. The NATEF office will determine whether an additional day or additional team members will be required to complete the evaluation.

6. ETL reports results to NATEF

The ETL will submit all on-site evaluation materials and a final report to NATEF with a recommendation for or against program certification.

7. Program certification

The national office will review the final report and all additional evaluation materials to determine whether the program meets the requirements for certification and will make their recommendation to the ASE Board. The NATEF President will approve certification as sanctioned by the Board of Directors.

Programs that do not earn certification will be given a written report specifying improvements that must be made to qualify for certification. The decision at the national level will be final unless appealed to the ASE Board of Directors. Appeals will be heard only at regular meetings of the Board.

The Program Administrator and the state Trade & Industrial Supervisor will be notified of all decisions regarding the certification status of all programs applying for ASE certification.

8. Display and reporting of certification materials

A wall plaque will be forwarded from the national office to the designated program primary contact. Schools **must** accurately report areas of ASE certification.

9. Certified General Service Technician Program List

The NATEF office maintains a current listing of all ASE-certified programs. The list is made available on the NATEF website.

10. Compliance report

A program will be certified for five years. A compliance report is required after 2½ years. The compliance report will be used to verify that a program is maintaining its standards. NATEF will notify the program administrator of the compliance date and will send the appropriate compliance review forms at that time. The Advisory Committee must complete the report and the program administrator must return the forms to the NATEF office.

NATEF may randomly select programs at the 2½-year period for an on-site compliance review by an ETL and NATEF Trustees, staff, consultants, or other designated representatives. The selected programs will be notified, in advance, of the on-site review by the NATEF office. Programs should be prepared to provide documentation on how they are maintaining the standards. All costs for this on-site review will be paid by NATEF.

11. Recertification

The NATEF office will contact the program six (6) months prior to the certification expiration date. Programs must formally request recertification materials and follow the process outlined above.

On-site Evaluation Cost Sheet

General Service Technician Program

	CERTIFICATION	RECERTIFICATION
Certification Manuals (Integrated Academic Skills general statements and workplace skills must be purchased separately (\$26)	\$94.00	\$82.00
Application Fee	\$315.00	\$315.00
On-site Evaluation Team Manuals (minimum of 4 sets for initial cert. and 3 sets for recert. @ \$65 each.)	\$260.00	\$195.00
Honorarium for Evaluation Team Leader (ETL) @ \$225/day *Please see below	\$450.00	\$225.00
<u>Estimated</u> mileage, hotel, and meal expenses for the ETL	<u>\$150.00</u>	<u>\$100.00</u>
<u>ESTIMATED</u> TOTAL COSTS	\$1269.00	\$917.00

NOTE: It is anticipated that team members recruited from local independent repair facilities and dealerships will serve without charge to the institution.

The NATEF office must receive the application fee and payment for the on-site evaluation team packets with the completed application. Applications received without these payments will be returned to the program for resubmission with payment.

***ETLs are to receive an additional honorarium of \$100 (per additional program) when evaluating multiple programs at one location.** Example: An ETL evaluates one general program and one manufacturer-specific program during an initial certification on-site evaluation. The honorarium paid to the ETL would be \$450 for the standard two-day honorarium, and \$100 for the additional program, for a total honorarium of \$550. *ETLs are paid as independent contractors, not as school employees.*

Costs of certification/recertification are subject to change. Contact the NATEF office for current information.

GENERAL SERVICE TECHNICIAN PROGRAM STANDARDS

STANDARD 1 - PURPOSE

THE GENERAL SERVICE TECHNICIAN PROGRAM SHOULD HAVE CLEARLY STATED PROGRAM GOALS, RELATED TO THE NEEDS OF THE STUDENTS AND EMPLOYERS SERVED.

Standard 1.1 - Employment Potential

The employment potential for general service technicians, trained to the level outlined in the program goals, should exist in the geographic area served by the program.

Standard 1.2 - Program Description/Goals

The written description/goals of the program should be shared with potential students and should include admission requirements, employment potential, training offered, and the cost of all tuition and fees. Technical qualifications of the faculty and the overall goal(s) of the program should also be included.

STANDARD 2 - ADMINISTRATION

PROGRAM ADMINISTRATION SHOULD ENSURE THAT INSTRUCTIONAL ACTIVITIES SUPPORT AND PROMOTE THE GOALS OF THE PROGRAM.

Standard 2.1 - Student Competency Certification

The certificate or diploma a student receives upon program completion should clearly specify general service technician competency.

Standard 2.2 - Chain of Command

An organizational chart should be used to indicate the responsibilities for instruction, administration, and support services.

Standard 2.3 - Administrative Support

Positive administrative support from institutional and local governing bodies should be demonstrated. Indicators of administrative support would include: support for staff in-service training; provision of appropriate facilities; up-to-date tools, equipment, and training support materials, and curriculum.

Standard 2.4 - Written Policies

Written policies should be adopted by the administration and policy board for use in decision-making situations and to provide guidance in achieving the program goals. Policies regarding safety, liability, and lab/shop operation should be written and prominently displayed as well as provided to all students and instructors.

Standard 2.5 - Advisory Committee

An Advisory Committee consisting of at least five (5) members (not including school personnel), must convene at least two times a year and be utilized to provide counsel, assistance, and information from the community served by the training program. This Committee should be broadly based and include former students, employed technicians, employers, and representatives for consumers' interests.

Standard 2.6 - Public/Community Relations

An organized plan should be used to provide the community at large information regarding the training program, its graduates, its plans, and any services provided to the community.

Standard 2.7 – Customer Vehicle Work

A systematic method of collecting, documenting, and disbursing customer vehicle work repair receipts should be used. Instructional staff should not be required to collect payment for customer vehicle work repairs. (This applies only to programs that accept customer vehicles for instruction.)

STANDARD 3 - LEARNING RESOURCES

SUPPORT MATERIAL, CONSISTENT WITH BOTH PROGRAM GOALS AND PERFORMANCE OBJECTIVES, SHOULD BE AVAILABLE TO STAFF AND STUDENTS.

Standard 3.1 - Service Information

Service information with current manufacturer's service procedures and specification data for vehicles manufactured within the last ten (10) years should be available. This information should be accessible to students while working in the lab/shop area.

Standard 3.2 - Multimedia

Appropriate up-to-date multimedia materials such as video equipment, transparencies, CD ROM, etc. should be readily available and utilized in the training process.

Standard 3.3 - Instructional Development Services

The service of professional instructional development personnel should be used when available. At a minimum, equipment and supplies should be available for duplication or copying printed materials and transparencies. Instructional development personnel should conduct in-service and/or training in curriculum and media development.

Standard 3.4 - Periodicals

Current general and technical automobile magazines and newspapers should be available for student and instructor use.

Standard 3.5 - Student Materials

Necessary instructional texts or pertinent material should be available for each student to satisfy the objectives of the mode of instruction used. Basic textbooks should have copyright dates that are not over six (6) years old; specialized textbooks should have copyright dates that are not over six (6) years old.

STANDARD 4 - FINANCES**FUNDING SHOULD BE PROVIDED TO MEET THE PROGRAM GOALS AND PERFORMANCE OBJECTIVES.****Standard 4.1 - Program Training Cost**

The enrollment in the program should be sufficient to keep the per-student training costs to a realistic figure.

Standard 4.2 - Budget

An adequate annual budget should be developed, allocated, and used for the operation of the program.

Standard 4.3 - Budget Preparation

The budget should be prepared by the institutional administration in conjunction with the program faculty.

Standard 4.4 - Status Reports

Budget status reports should be made available to program staff at least quarterly.

STANDARD 5 - STUDENT SERVICES**SYSTEMATIC PRE-ADMISSION TESTING, INTERVIEWS, COUNSELING SERVICES, PLACEMENT, AND FOLLOW-UP PROCEDURES SHOULD BE USED.****Standard 5.1 – Skills Assessment**

For students to develop the skills and knowledge required to service today's automobiles, each student must possess, or be given the opportunity to develop, essential foundation skills in reading, mathematics, science, and mechanical aptitude. To this end, a formal skills assessment instrument (process) for these fundamental skills should be used to evaluate students to ensure that each student has a reasonable probability of success as an automobile technician. Testing procedures and how the test results will be used (e.g., placement, assessment of student's developmental needs, etc.) should be stated in program explanatory material, and justification for all requirements should be available.

Standard 5.2 - Pre-admission Counseling

Prior to program admission, a student should be interviewed and counseled regarding automotive careers.

Standard 5.3 - Student Records

Permanent records of all students, former and current, should be available, preferably in one central location, and kept confidential.

Standard 5.4 - Placement

A systematic student placement system should be used to assist program graduates to obtain employment in the automobile industry.

Standard 5.5 – Annual Follow-up

A follow-up system should be used to determine students' employment location and for feedback regarding the efficiency, effectiveness, and appropriateness of training. The follow-up procedure should be designed to assure feedback regarding needed additions to or deletions from the training curriculum, program, and tools and equipment. Follow-up of graduates employed outside of the automobile industry should indicate reasons for non-industry employment. When applicable, this information should be used to modify the training quality and/or content.

Standard 5.6 - Legal Requirements

The training program should meet all applicable local, state, and federal requirements.

STANDARD 6 - INSTRUCTION

INSTRUCTION MUST BE SYSTEMATIC AND REFLECT PROGRAM GOALS. A TASK LIST AND SPECIFIC PERFORMANCE OBJECTIVES WITH CRITERION-REFERENCED MEASURES MUST BE USED.

Standard 6.1 - Program Plan

The training plan should progress in logical steps, provide for alternate sequences where applicable, and be made available to each student.

Standard 6.2 - Student Training Plan

A training plan for each student should be developed and used, indicating the student's training goal(s) and specific steps needed to meet that goal. Students should be given a copy of their training plan.

Standard 6.3 - Preparation Time

Adequate time should be provided for teacher preparation and program development.

Standard 6.4 - Teaching Load

The instructor/student ratio and class contact hours should allow time for interaction on a one-to-one basis.

Standard 6.5 - Curriculum

All tasks (100%) must be taught in the curriculum. Additional tasks may be included to meet the needs of local employers. Additional tasks should be approved by the Advisory Committee.

Instruction on the legal aspects and responsibilities of the automobile technician in areas such as Environmental Protection Agency regulations, safety regulations, OSHA regulations, and other appropriate requirements should be included in the curriculum. Instruction and practice in filling out work order forms, ordering parts, and basic record keeping should be a part of the training program.

Tools and equipment must be available to perform the tasks.

Standard 6.6 - Student Progress

A record of each student's progress should be maintained through the use of a progress chart or other recording device. The record should indicate tasks required for program completion and those tasks the student has mastered.

Standard 6.7 - Performance Standards

All instruction should be performance based, with an acceptable performance standard stated for each task. These standards should be shared with students and potential employers. Students should demonstrate "hands-on competency" of a task before the instructor verifies a student's performance.

Standard 6.8 - Safety Standards

Safety instruction should be given prior to lab/shop work and be an integral part of the training program. A safety test should be included in the training program. Students and instructors should comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

Standard 6.9 - Personal Characteristics

All training activities and instructional material should emphasize the importance of maintaining high personal standards.

Standard 6.10 - Work Habits/Ethics

The training program should be organized in such a manner that work habits and ethical practices required on the job are an integral part of the instruction.

Standard 6.11 - Provision for Individual Differences

The training program should be structured in such a manner that students with different levels of cognitive and psychomotor skills can be accommodated.

Standard 6.12 - Related Instruction

Instruction in related mathematics, communication, and interpersonal relations should be provided and coordinated with ongoing instruction in the training program. This instruction should be provided by a qualified instructor.

Standard 6.13 - Testing

Both written and performance based tests should be used to validate student competency. Students should be encouraged to take certification tests that are publicly recognized indicators of capabilities.

Standard 6.14 - Evaluation of Instruction

Instructional procedures should be evaluated in a systematic manner. This evaluation should be through regular reviews by students and the administration. Self-evaluation of instruction should also be utilized on a systematic and regular basis. This system should include input from former students and the Advisory Committee members. Instructional procedures should show responsiveness to the feedback from these evaluations.

Standard 6.15 – On-Vehicle Service and Repair Work

On-vehicle service and repair work should be scheduled to benefit the student and supplement ongoing instruction on items specified in the NATEF task list. A student should have had instruction and practice on a specific repair task before on-vehicle service and repair work requiring that task is assigned. Vehicles donated by the manufacturers or other sources, customer-owned vehicles, and other training vehicles may be used as the primary source of on-vehicle service and repair work. General Service Technician Program student-owned vehicles, school buses, and other vehicles owned and operated by the governing body of the school should not be the primary source of on-vehicle service and repair work vehicles. All vehicles in the lab/shop should have a completed industry-type work order attached to or on the vehicle.

Standard 6.16 - Articulation

Agreements between programs with equivalent competencies should be used to eliminate unnecessary duplication of instruction and foster continued study.

STANDARD 7 - EQUIPMENT

EQUIPMENT AND TOOLS USED MUST BE OF THE TYPE AND QUALITY FOUND IN THE REPAIR INDUSTRY AND MUST ALSO BE THE TYPE NEEDED TO PROVIDE TRAINING TO MEET THE PROGRAM GOALS AND PERFORMANCE OBJECTIVES.

Standard 7.1 - Safety

Equipment and tools used in the training program must have all shields, guards, and other safety devices in place, operable, and used. Safety glasses must be worn by all students, instructors, and visitors in the lab/shop area while lab is in session.

Standard 7.2 - Quantity and Quality

The tools and equipment used in the training program should reflect the program goals and performance objectives. Sufficient tools and equipment should be available for the training offered. The tools and equipment should meet industry quality standards.

Standard 7.3 - Consumable Supplies

Sufficient consumable supplies should be readily available to assure continuous instruction.

Standard 7.4 - Maintenance

A preventive maintenance schedule should be used to minimize equipment downtime.

Standard 7.5 - Replacement

An annual review process should be used to maintain up-to-date tools and equipment at industry and safety standards. Student follow-up and Advisory Committee input should be used in this process.

Standard 7.6 - Inventory

An inventory system should be used to account for tools, equipment, parts, and supplies.

Standard 7.7 - Parts Purchasing

A systematic parts purchasing system, from work order - to parts specialist - to jobber, should be used. Task performance should not be unreasonably delayed due to lack of replacement parts.

Standard 7.8 - Hand Tools

Each student should have a basic hand tool set comparable to tools required for employment. Students should be encouraged to purchase a hand tool set during the period of instruction.

STANDARD 8 - FACILITIES

THE PHYSICAL FACILITIES MUST BE ADEQUATE TO PERMIT ACHIEVEMENT OF THE PROGRAM GOALS AND PERFORMANCE OBJECTIVES.

Standard 8.1 - Training Stations

Training stations (bench and on-vehicle service and repair work) should be available in the type and number required for the performance of tasks outlined in the program goals and performance objectives.

Standard 8.2 - Safety

The facilities should meet all applicable safety standards and an emergency plan should be in place and posted in all classrooms and lab/shop areas.

Standard 8.3 - Maintenance

A regular facilities maintenance program should be used to ensure facilities are suitable when required for instruction.

Standard 8.4 - Housekeeping

The classroom(s), lab/shop, and support area(s) should be kept clean and orderly.

Standard 8.5 - Office Space

An area separate from the lab/shop should be available and convenient for the instructor(s) use as an office.

Standard 8.6 - Instructional Area

A classroom convenient to, but separate from, the lab/shop area should be available for instruction and other non-lab/shop activities.

Standard 8.7 - Storage

Storage areas for tools, parts, supplies, and automobiles should be sufficient to support the activities outlined in the program goals and performance objectives. Security should be provided to prevent pilferage and vandalism.

Standard 8.8 - Support Facilities

Restrooms and clean-up areas should be provided for both male and female students and should be convenient to the instructional area.

Standard 8.9 - Ventilation

An adequate exhaust fume removal system should be in place and operational. When appropriate, heating and cooling systems should be used to provide sufficient comfort for learning.

Standard 8.10 - First Aid

A first aid kit should be in place and should comply with local regulations and school policy.

Standard 8.11 - Facility Evaluation

The Advisory Committee should conduct an annual evaluation of the facilities to assure adequacy to meet program goals.

STANDARD 9 - INSTRUCTIONAL STAFF**THE INSTRUCTIONAL STAFF MUST HAVE TECHNICAL COMPETENCY AND MEET ALL STATE AND LOCAL REQUIREMENTS FOR CERTIFICATION.****Standard 9.1 - Technical Competency**

Instructors must hold current ASE certification in Suspension & Steering (A4), Brakes (A5), Electrical/Electronic Systems (A6), and Engine Performance (A8).

Standard 9.2 - Instructional Competency/Certification

Instructors should meet all state certifying requirements.

Standard 9.3 - Technical Updating

Faculty members should be provided technical materials required to maintain their competency. Instructors must attend a minimum of 20 hours of in-service technical training each year.

Standard 9.4 - First Aid

The program should have a written policy, approved by the administrator of the school, on First Aid procedures.

Standard 9.5 - Substitutes

A systematic method of obtaining "substitute" instructors should be used to assure instructional continuity. An orientation session for substitutes should be held on a regular basis. The substitute should be a competent automobile instructor.

STANDARD 10 - COOPERATIVE AGREEMENTS**WRITTEN POLICIES AND PROCEDURES SHOULD BE USED FOR COOPERATIVE AND APPRENTICESHIP TRAINING PROGRAMS. (This applies only to programs that offer cooperative/apprenticeship training.)****Standard 10.1 - Standards**

The student training plan and performance standards should be developed and coordinated by the supervising instructor.

Standard 10.2 - Agreements

All agreements should be written and legally binding.

Standard 10.3 - Supervision

A supervising instructor or supervising co-op coordinator should be assigned responsibility, authority, and time to coordinate and monitor cooperative/apprenticeship training in general service technician programs.

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TASK LIST AND ASSUMPTIONS – GENERAL SERVICE TECHNICIAN PROGRAM

The NATEF Automobile Technician Training Program task list was reviewed and updated in February 2009 by a committee of individuals representing the major automobile manufacturers, automobile repair shop owners and technicians, automobile instructors and trainers, and automobile equipment and parts suppliers. The General Service Technician Program task list is a subset of the 2008 automobile program task list.

The NATEF Board of Trustees and ASE Board of Directors approved the revised program standards in May 2009. The committee reviewed the task list, tools and equipment list, program hours, and instructor qualifications. The committee was also provided the most current National Institute for Automotive Service Excellence (ASE) Automobile Technician Tests Task Lists for reference purposes.

Theory instruction and hands-on performance of all the basic tasks will provide initial training for employment in the automotive service field or further training at a post-secondary institution. Competency in performing the tasks will indicate to employers that the graduate is skilled in that area.

GST programs are required to teach 100% of the tasks listed, therefore, priority numbers are not assigned to the GST task list as they are in the eight areas for traditional automobile certification. *Note: A task is a psychomotor or cognitive entry-level learning activity consisting of one or more measureable steps accomplished through an instructor presentation, demonstration, visualization or a student application.*

The tasks identified in Introduction to Auto Shop and Personal Safety, Tools and Equipment, Looking for Information, Preparing Vehicle for Service, and Preparing Vehicle for Customer relate to some of the following assumptions:

1. It is assumed that:

- * appropriate theory, safety, and support instruction will be required for performing each task;
- * the instruction has included identification and use of appropriate tools and testing and measurement equipment required to accomplish certain tasks;
- * the student has received the necessary training to locate and use current reference and training materials from accepted industry publications and resources;
- * the student has demonstrated the ability to write work orders and warranty reports, to include information regarding problem resolution and the results of the work performed for the customer and manufacturer. The writing process will incorporate the “Three C’s” (concern, cause and correction) as a format to communicate this information.

2. It is assumed that:
 - all diagnostic and repair tasks described in this document are to be accomplished in accordance with manufacturer's recommended procedures and safety precautions as published.

3. It is assumed that:
 - * individual training programs being evaluated for certification should have written and detailed performance standards for each task taught in the curriculum;
 - * learning progress of students will be monitored and evaluated against these performance standards;
 - * a system is in place that informs all students of their individual progress through all phases of the training program.

4. It is assumed that:
 - * individual courses of study will differ across general service technician programs;
 - * development of appropriate learning delivery systems and tests which monitor student progress will be the responsibility of the individual training program.

5. It is assumed that:
 - * all students will receive instruction in the storage, handling, and use of Hazardous Materials as required in Hazard Communication Title 29, Code of Federal Regulation Part 1910.1200, 'Right to Know Law', and state and local requirements;
 - * hazardous and toxic materials will be handled, removed and recycled or disposed of according to federal, state, and local regulations.

DEFINITIONS – TECHNICAL TERMS

ADJUST - To bring components to specified operational settings.

ALIGN - To restore the proper position of components.

ANALYZE - Assess the condition of a component or system.

ASSEMBLE (REASSEMBLE) - To fit together the components of a device or system.

BALANCE - To establish correct linear, rotational or weight relationship.

BLEED - To remove air from a closed system.

CAN – Controller Area Network. CAN is a network protocol (SAE J2284 / ISO 15765-4) used to interconnect a network of electronic control modules.

CHARGE - To bring to a specified state, e.g., battery or air conditioning system.

CHECK - To verify condition by performing an operational or comparative examination.

CLEAN - To rid component of foreign matter for the purpose of reconditioning, repairing, measuring or reassembling.

DEGLAZE – To remove a smooth, glossy surface.

DETERMINE - To establish the procedure to be used to perform the necessary repair.

DETERMINE NECESSARY ACTION – Indicates that the diagnostic routine(s) is the primary emphasis of a task. The student is required to perform the diagnostic steps and communicate the diagnostic outcomes and corrective actions required addressing the concern or problem. The training program determines the communication method (worksheet, test, verbal communication, or other means deemed appropriate) and whether the corrective procedures for these tasks are actually performed.

DIAGNOSE - To identify the cause of a problem.

DISASSEMBLE - To separate a component's parts as a preparation for cleaning, inspection or service.

DISCHARGE - To empty a storage device or system.

EVACUATE - To remove air, fluid or vapor from a closed system by use of a vacuum pump.

FLUSH - To internally clean a component or system.

HIGH VOLTAGE – Voltages of 50 volts or higher.

HONE - To restore or resize a bore by using rotating cutting stones.

JUMP START - To use an auxiliary power supply to assist a battery to crank an engine.

LOCATE – Determine or establish a specific spot or area.

MEASURE - To determine existing dimensions/values for comparison to specifications.

ON-BOARD DIAGNOSTICS (OBD) - Diagnostic protocol which monitors computer inputs and outputs for failures.

PARASITIC DRAW - Electrical loads which are still present when the circuit is turned OFF.

PERFORM - To accomplish a procedure in accordance with established methods and standards.

PERFORM NECESSARY ACTION – Indicates that the student is to perform the diagnostic routine(s) and perform the corrective action item. Where various scenarios (conditions or situations) are presented in a single task, at least one of the scenarios must be accomplished.

PURGE - To remove air or fluid from a closed system.

REMOVE - To disconnect and separate a component from a system.

REPAIR - To restore a malfunctioning component or system to operating condition.

REPLACE - To exchange a component; to reinstall a component.

RESURFACE – To restore correct finish.

SERVICE - To perform a procedure as specified in the owner's or service manual.

TEST - To verify condition through the use of meters, gauges or instruments.

TORQUE - To tighten a fastener to specified degree or tightness (in a given order or pattern if multiple fasteners are involved on a single component).

VERIFY - To establish that a problem exists after hearing the customer's concern; or to confirm the effectiveness of a repair.

VOLTAGE DROP - A reduction in voltage (electrical pressure) caused by the resistance in a component or circuit.

General Service Technician Program Task List

Introduction to Auto Shop and Personal Safety

- Identify general shop safety rules and procedures.
- Utilize safe procedures for handling of tools and equipment.
- Identify and use proper placement of floor jacks and jack stands.
- Identify and use proper procedures for safe lift operation.
- Utilize proper ventilation procedures for working within the lab/shop area.
- Identify marked safety areas.
- Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other fire safety equipment.
- Identify the location and use of eye wash stations.
- Identify the location of the posted evacuation routes.
- Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities.
- Identify and wear appropriate clothing for lab/shop activities.
- Secure hair and jewelry for lab/shop activities.
- Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems , and hybrid vehicle high voltage circuits.
- Demonstrate awareness of the safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems, etc.).
- Locate and demonstrate knowledge of material safety data sheets (MSDS).

Tools and Equipment

- Identify tools and their usage in automotive applications.
- Identify standard and metric designation.
- Demonstrate safe handling and use of appropriate tools.
- Demonstrate proper cleaning, storage, and maintenance of tools and equipment.

Looking for Information

- Identify sources of service information
 - Locate and use paper and electronic service information.
 - Locate and use Technical Service Bulletins (TSBs).
 - Demonstrate awareness of special service messages, service campaigns/recalls, vehicle/service warranty applications, and service interval recommendations.
- Vehicle identification information
 - Locate Vehicle Identification Number (VIN) and production date code.
 - Apply knowledge of Vehicle Identification Number (VIN) information.
 - Demonstrate awareness of other vehicle information labels (such as tire, emissions, etc.).

Preparing Vehicle for Service

- Identify information needed and the service requested on a repair order.
- Identify purpose and demonstrate proper use of fender covers, mats.
- Demonstrate use of the three C's (concern, cause, and correction).
- Review vehicle service history.
- Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.

Preparing Vehicle for Customer

- Ensure vehicle is prepared to return to customer per school/company policy (floor mats, steering wheel cover, etc.).

Basic Vehicle Service

- Determine fluid type requirements and identify fluid.
- Check and adjust engine oil level.
- Check and adjust engine coolant level.
- Check and adjust power steering fluid level.
- Check and adjust brake fluid level.
- Check and adjust windshield washer fluid level.
- Check and adjust differential/transfer case fluid level.
- Check and adjust transmission fluid level.
- Check and replace wiper blades.
- Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment.
- Inspect and replace air filter.
- Check and adjust tire air pressure.
- Inspect exhaust system components.

Engine Repair

- Demonstrate knowledge of four-cycle engine operation.
- Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.
- Perform cooling system pressure tests; test coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; perform necessary action.
- Test cooling system for the presence of combustion gases.

- Drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required.
- Perform oil and filter change; reset oil life monitoring system where applicable.
- Remove and replace radiator; replace radiator hoses.
- Inspect powertrain mounts; determine necessary action.

Automatic Transmission

- Perform visual inspection of transmission; replace fluid and filters.

Manual Drive Train and Axles

- Diagnose fluid loss, level, and condition concerns; determine necessary action.
- Drain and fill transmission/transaxle and final drive unit.
- Identify and inspect clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, and springs; determine necessary action.
- Identify and inspect hydraulic clutch slave and master cylinders, lines, and hoses; determine necessary action.
- Bleed clutch hydraulic system.
- Inspect and replace wheel studs and lug nuts.
- Inspect constant velocity (CV) joint boots.
- Remove and replace rear wheel drive driveshaft.

Suspension and Steering

- Identify and interpret suspension and steering system concerns; determine necessary action.
- Determine proper power steering fluid type; inspect fluid levels and condition.
- Flush, fill, and bleed power steering system.
- Diagnose power steering fluid leakage; determine necessary action.
- Lubricate suspension and steering systems.

- Inspect, remove, and replace shock absorbers.
- Inspect, remove, and install stabilizer bar bushings, brackets, and links.
- Inspect, remove, and install strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount.
- Perform pre-alignment inspection and measure vehicle ride height; determine necessary action.
- Demonstrate knowledge of the principals of steering geometry using caster, camber and toe.
- Inspect tires; identify abnormal tire wear patterns; determine necessary action.
- Demonstrate knowledge of the causes of wheel tire vibration, shimmy, and noise.
- Identify vehicles equipped with a tire pressure monitoring system (TPMS).
- Demonstrate knowledge of service considerations of vehicles equipped with a tire pressure monitoring system (TPMS).
- Rotate tires according to manufacturer's recommendations.
- Balance wheel and tire assembly.
- Dismount, inspect, and remount tire on wheel.
- Repair tire using internal patch.
- Reinstall wheel; torque lug nuts.

Brakes

- Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging or wear; tighten loose fittings and supports; determine necessary action.
- Select, handle, store, and fill brake fluids to proper level.
- Bleed brake system.
- Test brake fluid for contamination; determine necessary action.
- Remove, clean, inspect, and measure brake drums; determine necessary action.
- Refinish brake drum; measure final drum diameter.

- Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.
- Inspect and install wheel cylinders.
- Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings.
- Install wheel, torque lug nuts, and make final checks and adjustments.
- Remove caliper assembly; inspect for leaks and damage to caliper housing; determine necessary action.
- Clean and inspect caliper mounting and slides/pins for wear, operation, and damage; determine necessary action.
- Remove, inspect and replace pads and retaining hardware; determine necessary action.
- Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads, and inspect for leaks.
- Clean, inspect, and measure rotor thickness, lateral runout and thickness variation; determine necessary action.
- Remove and reinstall rotor.
- Refinish rotor on vehicle; measure final rotor thickness.
- Refinish rotor off vehicle; measure final rotor thickness.
- Install wheel, torque lug nuts, and make final checks and adjustments.
- Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.
- Inspect vacuum-type power booster unit for leaks; inspect the check valve for proper operation; verify proper booster function.
- Demonstrate knowledge of the causes of wheel bearing noises, wheel shimmy, and vibration concerns.
- Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed.

- Check parking brake and indicator light system operation; determine necessary action.
- Check operation of brake stop light system; determine necessary action.
- Replace tapered roller wheel bearing and race.
- Clean, inspect, lubricate, install and adjust wheel bearing.
- Identify and inspect electronic brake control system components; determine necessary action.
- Demonstrate knowledge of the operation of the brake hydraulic failure warning light.

Electrical/Electronic Systems

- Demonstrate knowledge of the operation of series, parallel and series-parallel circuits using principles of electricity (Ohm's Law).
- Use wiring diagrams during diagnosis of electrical circuit problems.
- Demonstrate the proper use of a digital multimeter (DMM) during diagnosis of electrical circuit problems, including source voltage, voltage drop, current flow and resistance.
- Check electrical circuits with a test light; determine necessary action.
- Check electrical circuits using fused jumper wires; determine necessary action.
- Demonstrate knowledge of the causes and effects of shorts, grounds, opens, and resistance problems in electrical/electronic circuits.
- Measure key-off battery drain (parasitic draw); determine necessary action.
- Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.
- Inspect and test switches, connectors, relays, and wires of electrical/electronic circuits.
- Repair connectors and terminal ends.
- Perform solder repair of electrical wiring.

- Perform battery state-of-charge test; determine necessary action.
- Perform battery capacity test; confirm proper battery capacity for vehicle application; determine necessary action.
- Maintain or restore electronic memory functions.
- Inspect, clean, fill, and/or replace battery, battery cables, connectors, clamps, and hold-downs.
- Perform battery charge.
- Start a vehicle using jumper cables or an auxiliary power supply.
- Perform starter current draw tests; determine necessary action.
- Perform starter circuit voltage drop tests; determine necessary action.
- Inspect and test starter relays and solenoids; determine necessary action.
- Remove and replace starter.
- Perform charging system output test; determine necessary action.
- Remove and replace generator (alternator).
- Diagnose the cause of dim or no light operation; determine necessary action.
- Inspect, replace, and aim headlights and bulbs.

Heating and Air Conditioning

- Identify and visually inspect A/C system components.
- Locate refrigerant label and identify specified refrigerant type (e.g., R-12, R-134a).
- Conduct preliminary performance test of A/C system (i.e., verify compressor engagement, measure outlet duct temperature, sense temperature change across A/C components); determine necessary action.
- Identify refrigerant type; select and connect proper gauge set; record temperature and pressure readings.
- Conduct performance test of the heater/ventilation system.

- Inspect and replace cabin air filter.

Engine Performance

- Perform engine cranking and running vacuum tests; determine necessary action.
- Perform cylinder power balance test; determine necessary action.
- Perform cylinder cranking compression test; determine necessary action.
- Perform cylinder leakage test; determine necessary action.
- Verify engine operating temperature; determine necessary action.
- Prepare 4 or 5 gas analyzer; inspect and prepare vehicle for test and obtain exhaust readings; determine necessary action.
- Retrieve and record stored diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable.
- Obtain and interpret scan tool data.
- Perform fuel pressure test.
- Replace fuel filters.
- Remove and replace secondary ignition components.
- Remove and replace thermostat and gasket/seal.
- Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with a threaded insert.