LAKETECH

2012 - 2013

Master Plan of Instruction
Automotive Service Technology 1 & 2

Mark McKinney, Instructor

MISSION: Lake Technical Center's mission is to meet the educational needs of the community by offering a variety of high quality career-technical training opportunities.

charting new directions

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LAKE TECHNICAL CENTER
Automotive Service Technology 1 & 2

INTRODUCTION

The Automotive Technology 1 & 2 programs are an 800 and 1600 hour program, respectively, responsible for training individuals to attain an entry-level status in the automotive industry. The program covers a broad range of instruction that may be found in the program outline of this master plan. An appropriate amount of time is spent in each area to thoroughly cover needed instructional material as well as to gain manipulative skills.

The program utilizes both theory and practical application of material to help the students gain needed knowledge and skills. Due to the increasing complexity of systems on today's automobile, it is even more important to know why a procedure is done as well as how it is done. Understanding how a system functions, therefore, has an important role to play in this program of study.

Each student must successfully complete written test material on theory and related topics as well as successfully demonstrate the practical application of this information in the laboratory environment.

Prerequisites for this program should include a solid background in math and science in general with emphasis on basic math, formulas, percentiles, fraction and decimal conversion, and the use of precision measuring equipment, physics, chemistry and metallurgy. These areas are taught as part of the program of study, but it would be helpful to have these skills in advance.

Materials used are self-paced which allow students to progress at their own pace. Competencies in each area are completed after both written and performance testing.

AUTOMOTIVE TECHNOLOGY MISSION

The mission of the Automotive Technology Program is to prepare students for employment in the automotive mechanic field. It is also designed to assist those students who wish to update present skills and cross-train in other automotive areas. The program focuses on student and industry needs. Training is constantly updated by the instructor and program advisory committee to keep current with technological changes.

PHILOSOPHY

- We believe in education and work.
- We believe in careful assessment of abilities and interests so that all students, including those with special needs, may formulate realistic occupational goals.
- We believe in equal access to training programs and in providing comprehensive support services.
- We believe in providing an active learning environment that develops technical skills, academic skills, and effective work habits.
- We believe in continuous program and curriculum revision based on input from employers, advisory committee members, concerned citizens, students, and school personnel.
- We believe in innovative teaching methods that prepare students to meet industry standards.
- We believe in lifelong learning, responsible citizenship, and promoting individual self-worth to help our students become productive citizens in today’s global society.

TEST OF ADULT BASIC EDUCATION (TABE)

All applicants for Career and Technical Education programs 450 hours or more, with the exception of Law Enforcement Officer applicants, take a state mandated TABE prior to enrollment (documented A.A., A.S., A.A.S., B.A, and B.S. degreed persons are exempt from this requirement).

According to Florida Department of Education rules, students who fail all or parts of the TABE may only retest using a different TABE version after 60 documented hours of remediation in the Applied Academics for Adult Education (AAAE) lab or three months if not attending AAAE. Students may not retake the same test version for six months. We, therefore, strongly recommend that students test early, especially for licensure programs, in order to allow time for remediation and retesting should the need arise.

Students who do not meet the minimum TABE scores set by the Florida Department of Education for their program must begin attending remediation classes in the AAAE lab prior to or at the time of enrollment in a Career and Technical Education class for at least one block a day and make acceptable progress as determined by the AAAE instructor. Students should meet state mandated TABE requirements by the time they have completed 50% of their program. Students who do not meet state mandated TABE scores may not receive a certificate of completion as per Florida Department of Education rules.

Applicants transferring TABE or CPT scores from other testing centers must do so by having an official score report sent directly to the Admissions Office prior to enrollment. Scores brought in by hand will not be accepted.

TABE scores are good for two years and must be valid at the time of enrollment. TABE scores that expire during continuous enrollment remain valid until the end of such enrollment. Under continuous enrollment, students must be enrolled at least 50% of one semester per school year and may miss no more than one consecutive semester. Continuous enrollment applies to attendance in a single program.

The required TABE exit scores for this program are: Reading 9; Math 10; and Language 9.

ADMISSION REQUIREMENTS

Applicants must be at least 16 years of age and should be academically, physically, and emotionally capable of meeting the demands of the chosen program. Applicants make initial application through the Admissions Office. A minimum skills evaluation is part of the admission process. It is highly recommended that co-enrolled and dual-enrolled students meet with the program Instructor prior to entering the program. A certified State of Florida driver's license is mandatory for this program.

1. Complete an LTC online application
2. Take the TABE
3. Meet with a counselor
4. Confer with the program instructor or department chairperson prior to actual enrollment

ESSENTIAL TRAINING TASKS

Physical Requirements

Ability to:

1. Maintain a high degree of manual dexterity
2. Stoop
3. Kneel
4. Lift at least 50 pounds and walk with it
5. Use voice, hearing, and sight effectively to perform jobs in the automotive field
6. Crouch or bend
7. High degree of finger dexterity
8. Crawl
9. Differentiate colors
10. Handle and finger supplies
11. Use depth perception
12. Work in an atmosphere of loud noise
13. Work in an atmosphere of changes in temperature
14. Perform repetitive tasks
15. Measure accurately
16. Work without close, direct supervision
17. Work on multiple tasks and priorities
18. Perform and complete tasks of relative complexity

Mental and Emotional Requirements

Ability to:

1. Handle confrontation and frustration and assist in problem resolution
2. Interpret a variety of instructions furnished in written, oral, and diagrammatic form
3. Work with others
4. Cope with high levels of stress
5. Perform mathematical computations at a level of tenth grade or higher
6. Make fast decisions under pressure
7. Cope with anger, fear, and hostility of others in a calm manner
8. Demonstrate a high degree of patience
9. Read and understand computer and related equipment
10. Work in close or crowded areas

TUITION

Tuition is charged for adult students at a reasonable rate that may vary slightly from year to year and is due prior to the first day of each semester. Current fee information is available from the Admissions Office. Tuition is waived for eligible high school dual-enrolled students. Failure to pay all fees due at the time class begins will result in the student not being able to attend class and/or clinicals.

CLASS SCHEDULE

Full-time students attend class from 8:00 AM to 2:30 PM Monday through Friday with a 30 minute lunch period. This schedule provides 6 hours of instruction each day for a total of 30 hours per five-day week, excluding holidays and school breaks as outlined in the current school calendar.

ATTENDANCE POLICY

In an effort to develop appropriate work ethics, Lake Tech students are expected to attend all class sessions. As is expected in the workplace, when it is necessary to be absent due to illness or emergency situations, all students are to notify the instructor on or before the date of absence. The student attendance policy for each postsecondary program is consistent with industry standards.

Campus attendance is kept via a computerized system. It is the responsibility of the student to **log in** and **out** in order to receive credit for class time. This allows the school to keep accurate attendance records for the actual number of hours and minutes attended.

Absences

A student who is absent for six (6) consecutive class sessions will be withdrawn from enrollment in his/her program. A student withdrawn for absenteeism must petition administration to return. Students exhibiting a pattern of consecutive absences less than six days will be subject to dismissal as determined by a School Intervention Team.

Students in non-licensure programs must have achieved a minimum of 80% attendance at the end of each quarter. Students not having met this requirement will sign an acknowledgement that they have been notified that continued absences will pose a threat to grades and program enrollment. School Intervention Team meetings will be held as necessary to attempt to alleviate issues resulting in excessive absences and to counsel the student of possible alternatives and consequences. Students who miss more than 20% of their program will not be allowed to re-enroll the next semester and must wait until the following enrollment period to re-register. Only regularly scheduled class hours will be reported for attendance.

Licensure program attendance policies are more rigid due to licensure requirements. See the individual program Master Plan of Instruction for specifics.

Tardiness

Students are expected to be in their seats promptly in the morning, after break, and after lunch. Students must notify the instructor before the start of class of any anticipated tardiness.

Leaving Campus During School Hours

Adult students should notify their instructor when leaving campus early. This is for the safety of students and to allow the instructor to best utilize instructional resources.

GRADING

Grading Scale

The grading policy for this program is as follows:

90-100	Excellent
80- 89	Passing
< 80	Failing

Lake Technical Center is a postsecondary institution designed to provide trained individuals to industry. The grading scale for this program reflects industry standards. The approved postsecondary program grading requirements must be met if the student is to receive a certificate.

An average grade of 85% is required to earn an occupational completion point or a certificate of completion. Student grades are determined through the following percentages:

Student grades are determined through the following percentages:

1. Skills (hands-on) 33 1/3 percent
2. Knowledge 33 1/3 percent
3. Work Habits 33 1/3 percent

Skills - Student Performance Objectives

One-third of the grade comes from hands-on skills, as determined by the student performance objectives. Student performance objectives are based on criteria that have been identified for each of the competencies listed in the Florida Curriculum Frameworks and Student Performance Standards (attached). Students are given an overall rating for the competency. The ratings are as follows:

5 The student can perform this skill without supervision and with initiative and adaptability to problem situations.
4 The student can perform this skill satisfactorily without assistance or supervision.
3 The student can perform this skill satisfactorily but requires some assistance and/or supervision.
2 The student can perform parts of this skill satisfactorily, but requires considerable assistance and/or supervision.
1 The student cannot perform this skill even with constant supervision.

Students who score below a three (3) on the Performance Test will have the opportunity to repeat the learning activities, practice the preparation again and retake the Performance Test.

Knowledge

One-third of the grade comes from written tests. The instructor will give knowledge tests at the completion of a chapter or assignment. The tests will be on the material covered. Students must achieve an 85% or better on each test. Students are given the opportunity to re-study and re-take the knowledge test if necessary.

Work Habits

One-third of the grade comes from the Work Habits Assessment Form, which includes:

1. Attendance: The number of days you attend class each week
2. Appearance: Student must be in uniform each day and while on campus
3. Punctuality: Being on time to class in the morning, and after break and lunch; calling in when late
4. Cooperation: Working well with others, making decisions, coping with frustration, anger and hostility of others in a calm manner
5. Productivity: Following directions; coping with moderate to high levels of stress; staying on task and working without close, direct supervision; taking proper care of tools; following safety standards
6. Interpersonal Relations: Coping with confrontation, assisting in problem resolution; demonstrating self-control; accepting constructive criticism.

ACCEPTABLE DRESS

Students who attend Lake Tech shall dress in a manner appropriate for the job in which they are receiving training, including any special protective gear and professional uniforms. All clothing must be neither distracting nor offensive and be clean, neat, modest, in good repair and appropriately sized. Please refer to the Master Plans of Instruction for individual program dress code policies.

The director or designee has the final authority for determining whether or not a student's apparel conforms to the dress code. When it is determined that it does not, students will be required to change into clothing which will conform to this code or leave campus. Students may return to campus when they have changed into appropriate clothing.

Minimum Program Dress Code

1. Pants shall be worn fastened and at the waist. Pants should be dark colored, straight legged or boot cut (jeans are acceptable). Baggy pants are not permitted in any program area. Baggy pants are considered to be more than one size larger than the individual's waist. Shorts are not permitted.
2. Shoes must meet safety/industry standards. Sandals are not permitted
3. Program logo school T-shirts are to be worn.
4. Clothing should be clean and in good repair.
5. For safety reasons, shorts, loose clothing, jewelry, and loose hair below the collar are not allowed.
6. Hats are only permitted in shop areas if required by the program master plan of instruction and must be worn appropriately (i.e., ball cap bills worn forward).

Remember: students at this center are preparing for employment in positions where public relations are often a major factor. Individual desires may not always take precedence.

FINANCIAL SERVICES

Policies and guidelines for the administration of all financial aid are established according to federal and state law by a financial aid committee and published in the Financial Aid Policies and Procedures Manual. Applicants complete an information form, Free Application for Federal Student Aid, and furnish documentation needed to verify eligibility.

The Financial Aid Office will assist students, where possible, with access to financial support offered by federal agencies (U.S. Department of Education – Pell Grants, Department of Veterans' Affairs), other state and local agencies and local organizations (scholarships). Financial Aid personnel are available daily to assist students with financial aid needs and requests. The Financial Aid Coordinator is also the liaison for all local agencies.

TEXTBOOKS

The textbooks for Automotive Service Technology are:

1. Automotive Service
2. Automotive Service, LM

JOB DESCRIPTION

An automotive service technician is required to diagnose problems and take correct steps to fix these problems. Technicians need to fill out work orders, talk to customers, order parts, and use test equipment.

PLAN OF INSTRUCTIONAL PRACTICES

Teaching Methods

Material used is self-paced and competency based. Students proceed at their own pace with written, audio-visual, and hands-on training. They are tested periodically with written and practical testing. Practical shop experiences are designed to enhance and reinforce the theories involved as well as to develop manipulative skill and good work and safety practices.

Teaching aids utilizing slides, transparencies, recordings, DVDs, records, etc., are used to a great extent throughout all instruction. Wall charts, specification charts, and other reference materials are on constant display throughout the classroom and laboratory.

A great deal of equipment must be utilized for "hands-on" skill requirements. Test equipment such as ignition scopes, brake equipment, compression gauges, electronic test equipment, and a chassis dynamometer are used so that the students will acquire rapport in working with such equipment and will have a basis for future troubleshooting requirements.

Materials are reviewed and updated periodically to keep them as current and as relevant as possible.

Students are made responsible for all laboratory requirements such as maintaining tools, equipment, and facilities, writing repair orders, tool room management, and cleanup of shop areas.

Cooperative Education

Cooperative training is available for students and coordinated by the program instructor. Cooperative training is for students who have shown competence in program training, which indicates readiness for placement in an on-the-job program. High school students participating in the cooperative job placement program must be in at least the 12th grade and have completed 50% of exit points A and B.

Students who do not function satisfactorily on the job may be returned to the program for additional training, or when the cooperative agreement is terminated at the request of the student, the parent, the employer, or the program instructor.

Veterans will be accepted into the program in accordance with the Veterans Administration approved program.

Additional information regarding coop opportunities may be obtained from the program instructor.

Job Shadowing

Job shadowing experiences, or volunteer experiences, are available to students who may benefit from the experience. These experiences are designed to give the student actual hands-on experience doing a variety of automotive related tasks. Length and type of experiences will vary. The program instructor determines appropriateness of the experience. Additional information regarding job-shadowing experiences may be obtained from the program instructor.

GENERAL SCHOOL INFORMATION

Campus Safety
Basic safety standards, which will include fire drills, weather drills, lockdowns, equipment usage, and traffic regulations, will be covered in the program orientation and within the program as applicable. These basic safety standards will be reinforced throughout the program enrollment. Students should immediately report any safety concerns to an instructor or administrator. Please refer to the school catalog for more campus safety information.

Competency-based Instruction
Any student who enters a LTC program with previous experience or educational background that would enable the student to successfully complete a test of competence in any area may, with the permission of the instructor, complete a test to measure that competence.

Food and Drink in Program Areas
Food and drinks other than water are not allowed in classroom and laboratory areas. Water is permitted in these areas provided it is in a closed, covered container that will not spill if the container is tipped. This is to protect the equipment and furnishings in the classroom and laboratory areas.

Leaving Campus During School Hours
Adult students should notify their instructor when leaving campus early (except for lunch). This is for the safety of students and to allow the instructor to best utilize instructional resources.

Lunch
Food services are provided on the main campus by the Culinary Institute and are available during breaks and lunch. Adult students may leave the LTC campus during the scheduled 30-minute lunch break as long as they return to the program on time. High school students may not leave the LTC campus during the lunch break.

Parking Regulations
Students may park only in the south parking lot in spaces not designated as staff or customer service parking. For safety, loitering in or around vehicles once the vehicle is parked is not allowed and a 10 mph speed limit is enforced. In consideration of the neighbors and classes in session, loud music in vehicles on campus is prohibited.

Smoking
Smoking is only allowed in the designated smoking area.

PROGRAM OBJECTIVES

See the attached Florida State Department of Education Curriculum Framework for program objectives and desired competencies.

Florida Department of Education
Curriculum Framework

Program Title: Automotive Service Technology 1
Program Type: Career Preparatory
Career Cluster: Transportation, Distribution and Logistics

	PSAV
Program Number	T400700
CIP Number	0647060411
Grade Level	30, 31
Standard Length	1050 Hours
Teacher Certification	AUTO IND @7 G AUTO MECH @7 G
CTSO	SkillsUSA
SOC Codes (all applicable)	49-3023
Facility Code	245 http://www.fldoe.org/edfacil/sref.asp (State Requirements for Educational Facilities)
Targeted Occupation List	http://www.labormarketinfo.com/wec/TargetOccupationList.htm
Perkins Technical Skill Attainment Inventory	http://www.fldoe.org/workforce/perkins/perkins_resources.asp
Industry Certifications	http://www.fldoe.org/workforce/fcpea/default.asp
Statewide Articulation	http://www.fldoe.org/workforce/dwdframe/artic_frame.asp
Basic Skills Level	Mathematics: 10 Language: 9 Reading: 9

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Transportation, Distribution and Logistics career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Transportation, Distribution and Logistics career cluster.

The content includes but is not limited to planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Program Structure

This program is a planned sequence of instruction consisting of five occupational completion points.

NOTE: The sequence of OCP's after completing the core OCP A is at the discretion of the instructor. It should be noted that NATEF requires a minimum certification in four occupational areas (Brakes, Electrical/Electronics, Engine Performance and Suspension/Steering) for program certification. Florida Statute (F.S.) 1004.925 requires Automotive Service Technology programs to be industry certified by 2007.

When offered at the post secondary adult career and technical level, this program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

The following table illustrates the program structure:

OCP	Course Number	Course Title	Course Length	SOC Code
A	AER0014	Automobile Services Assistor	300	49-3023
B	AER0418	Automotive Brake System Technician	150	49-3023
C	AER0453	Automobile Suspension and Steering Technician	150	49-3023
D	AER0360	Automotive Electrical/Electronic System Technician	300	49-3023
E	AER0110	Engine Repair Technician	150	49-3023

Laboratory Activities

Laboratory activities are an integral part of this program. These activities include instruction in the use of safety procedures, tools, equipment, materials, and processes related to these occupations. Equipment and supplies should be provided to enhance hands-on experiences for students.

Special Notes

The purpose of this program is to prepare students for employment and/or specialized training in the automotive industry.

Competencies established by the Automotive Industries for "INDUSTRY TRAINING STANDARDS" plus integration of academic requirements and training in communications, leadership, human relations, employability skills, safe, efficient work practices and entrepreneurship account for 300 hours in the CORE curriculum (OCPA).

All the tasks that are assigned a priority number: P-1, P-2, or P-3 are National Automotive Technician Education Foundation Tasks. 95% of P-1 tasks will be performed; 80% of P-2 tasks; 50% of P-3 tasks. Please refer to the Task List Information in the Policies section for additional information on the requirements for instruction on tasks.

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 in any or all of the specialty areas. Competency in the tasks will indicate to employers that the graduate is skilled in that area.

1. It is assumed that:

    * In all areas, 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.

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 as published.
    * For every task listed, the following safety requirement must be strictly enforced: 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 hazardous materials in accordance with local, state, and federal safety and environmental regulations.

3. It is assumed that:

    * Individual training programs being evaluated for certification should have written and detailed performance standards for each task covered and taught in the curriculum;
    * Learning progress of students will be monitored and evaluated against these performance standards;
    * A system is in place, which 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 automobile technician training 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".
    * Hazardous and toxic materials will be handled, removed and recycled or disposed of according to federal, state, and local regulations.

Career and Technical Student Organization (CTSO)

SkillsUSA is the appropriate career and technical student organization for providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified

in the OJT framework apply.

Essential Skills

Essential skills identified by the Division of Career and Adult Education have been integrated into the standards and benchmarks of this program. These skills represent the general knowledge and skills considered by industry to be essential for success in careers across all career clusters. Students preparing for a career served by this program at any level should be able to demonstrate these skills in the context of this program. A complete list of Essential Skills and links to instructional resources in support of these Essential Skills are published on the CTE Essential Skills page of the FL-DOE website (http://www.fldoe.org/workforce/dwdframe/essential_skills.asp).

Basic Skills

In PSAV programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10.0, Language 9.0, and Reading 9.0. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed at http://www.fldoe.org/workforce/dwdframe/rtf/basicskills-License-exempt.rtf.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's IEP or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an Individual Educational Plan (IEP) served in Exceptional Student Education or ESE) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note postsecondary curriculum cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number (for eligible students with disabilities).

Articulation

This program has no statewide articulation agreement approved by the Florida State Board of Education. However, this does not preclude the awarding of credits by any college through local agreements.

For details on statewide articulation agreements which correlate to programs and industry certifications, refer to http://www.fldoe.org/workforce/dwdframe/artic_frame.asp.

Standards

After successfully completing this program, the student will be able to perform the following:

01.0 Demonstrate proficiency in the equipment skills and safety regulations relating to the automotive industry.
02.0 Demonstrate proficiency in routine maintenance and consumer services.
03.0 Demonstrate proficiency in the operation and servicing of automotive brake systems.
04.0 Demonstrate proficiency in drum brake diagnosis and repair.
05.0 Demonstrate proficiency in the operation of disc brake diagnosis and repair.

06.0 Demonstrate proficiency in the operation of power assist units diagnosis and repair.
07.0 Demonstrate proficiency in miscellaneous (wheel bearings, parking brakes, electrical, etc.)
08.0 Demonstrate proficiency in antilock brake system.
09.0 Demonstrate proficiency in **general suspension and steering systems diagnosis**.
10.0 Demonstrate proficiency in suspension systems diagnosis and repair; front suspensions.
11.0 Demonstrate proficiency in suspension systems diagnosis and repair; rear suspensions, wheel alignment diagnosis, adjustment, repair and miscellaneous service.
12.0 Demonstrate proficiency in wheel and tire diagnosis and repair.
13.0 Demonstrate proficiency in diagnosing/troubleshooting electrical/electronic components as related to power train.
14.0 Demonstrate proficiency in battery diagnosis and service.
15.0 Demonstrate proficiency in starting system diagnosis and repair.
16.0 Demonstrate proficiency in charging system diagnosis and repair
17.0 Demonstrate proficiency in lighting systems, gauges, warning devices, and driver information systems diagnosis and repair
18.0 Demonstrate proficiency in horn and wiper/washer and accessories diagnosis and repair
19.0 Demonstrate proficiency in appropriate math skills.
20.0 Demonstrate proficiency in appropriate understanding of basic sciences.
21.0 Demonstrate proficiency in employability skills.
22.0 Demonstrate proficiency in appropriate communication skills.
23.0 Demonstrate proficiency in acceptable employee behavior in the automotive industry.
24.0 Demonstrate proficiency in understanding of entrepreneurship.
25.0 Demonstrate proficiency in general engine diagnosis.
26.0 Demonstrate proficiency in cylinder head and valve train diagnosis and repair.
27.0 Demonstrate proficiency in engine block diagnosis and repair.
28.0 Demonstrate proficiency in lubrication and cooling systems diagnosis and repairs.
29.0 Demonstrate language arts knowledge and skills
30.0 Solve problems using critical thinking skills, creativity and innovation.

Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance

Florida Department of Education
Curriculum Framework

Program Title: Automotive Service Technology 2
Program Type: Career Preparatory
Career Cluster: Transportation, Distribution and Logistics

PSAV	
Program Number	T400800
CIP Number	0647060412
Grade Level	30, 31
Standard Length	750 Hours
Teacher Certification	AUTO IND @7 G AUTO MECH @7 G
CTSO	SkillsUSA
SOC Codes (all applicable)	49-3023
Facility Code	245 http://www.fldoe.org/edfacil/sref.asp (State Requirements for Educational Facilities)
Targeted Occupation List	http://www.labormarketinfo.com/wec/TargetOccupationList.htm
Perkins Technical Skill Attainment Inventory	http://www.fldoe.org/workforce/perkins/perkins_resources.asp
Industry Certifications	http://www.fldoe.org/workforce/fcpea/default.asp
Statewide Articulation	http://www.fldoe.org/workforce/dwdframe/artic_frame.asp
Basic Skills Level	Mathematics: 10 Language: 9 Reading: 9

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Transportation, Distribution and Logistics career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Transportation, Distribution and Logistics career cluster.

The content includes but is not limited to planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points.

NOTE: The sequence of OCP's is at the discretion of the instructor. It should be noted that NATEF requires a minimum certification in four occupational areas (Brakes, Electrical/Electronics, Engine Performance and Suspension/Steering) for program certification. Florida Statute (F.S.) 1004.925 requires Automotive Service Technology programs to be industry certified by 2007.

When offered at the post secondary adult career and technical level, this program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

The following table illustrates the program structure:

OCP	Course Number	Course Title	Course Length	SOC Code
A	AER0503	Automotive Engine Performance Technician	300	49-3023
B	AER0257	Automatic Transmission and Transaxle Technician	150	49-3023
C	AER0274	Manual Drivetrain and Axle Technician	150	49-3023
D	AER0172	Automotive Heating and Air Conditioning Technician	150	49-3023

Laboratory Activities

Laboratory activities are an integral part of this program. These activities include instruction in the use of safety procedures, tools, equipment, materials, and processes related to these occupations. Equipment and supplies should be provided to enhance hands-on experiences for students.

Special Notes

The purpose of this program is to prepare students for employment and/or specialized training in the automotive industry.

Competencies established by the Automotive Industries for "INDUSTRY TRAINING STANDARDS" plus integration of academic requirements and training in communications, leadership, human relations, employability skills, safe, efficient work practices and entrepreneurship account for 300 hours in the CORE curriculum (OCP A of Automotive Service Technology 1).

All the tasks that are assigned a priority number: P-1, P-2, or P-3 are National Automotive Technician Education Foundation Tasks. 95% of P-1 tasks will be performed; 80% of P-2 tasks; 50% of P-3 tasks. Please refer to the Task List Information in the Policies section for additional information on the requirements for instruction on tasks.

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 in any or all of the specialty areas. Competency in the tasks will indicate to employers that the graduate is skilled in that area.

1. It is assumed that:

   * In all areas, 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.

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 as published.
   * For every task listed, the following safety requirement must be strictly enforced: 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 hazardous materials in accordance with local, state, and federal safety and environmental regulations.

3. It is assumed that:

   * Individual training programs being evaluated for certification should have written and detailed performance standards for each task covered and taught in the curriculum;
   * Learning progress of students will be monitored and evaluated against these performance standards;
   * A system is in place, which 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 automobile technician training 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".
   * Hazardous and toxic materials will be handled, removed and recycled or disposed of according to federal, state, and local regulations.

The standard length of this program is 750 hours. **Automotive Service Technology 1** is a core program. It is recommended students complete **Automotive Service Technology 1,** or demonstrate mastery of the outcomes in that program, prior to enrollment in **Automotive Service Technology 2.**

Career and Technical Student Organization (CTSO)

SkillsUSA is the appropriate career and technical student organization for providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Essential Skills

Essential skills identified by the Division of Career and Adult Education have been integrated into the standards and benchmarks of this program. These skills represent the general knowledge and skills considered by industry to be essential for success in careers across all career clusters. Students preparing for a career served by this program at any level should be able to demonstrate these skills in the context of this program. A complete list of Essential Skills and links to instructional resources in support of these Essential Skills are published on the CTE Essential Skills page of the FL-DOE website (http://www.fldoe.org/workforce/dwdframe/essential_skills.asp).

Basic Skills

In PSAV programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10.0, Language 9.0, and Reading 9.0. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed at http://www.fldoe.org/workforce/dwdframe/rtf/basicskills-License-exempt.rtf.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's IEP or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an Individual Educational Plan (IEP) served in Exceptional Student Education or ESE) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note postsecondary curriculum cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number (for eligible students with disabilities).

Articulation

This program has no statewide articulation agreement approved by the Florida State Board of Education. However, this does not preclude the awarding of credits by any college through local agreements.

For details on statewide articulation agreements which correlate to programs and industry certifications, refer to http://www.fldoe.org/workforce/dwdframe/artic_frame.asp.

Standards

After successfully completing this program, the student will be able to perform the following:

01.0 Demonstrate proficiency in general engine diagnosis.

02.0 Demonstrate proficiency in computerized engine controls diagnosis and repair.
03.0 Demonstrate proficiency in ignition system diagnosis and repair.
04.0 Demonstrate proficiency in fuel, air induction, positive crankcase ventilation and exhaust systems diagnosis and repair.
05.0 Demonstrate proficiency in fuel, air induction, positive crankcase ventilation and exhaust systems diagnosis and repair.
06.0 Demonstrate proficiency in intake air temperature controls, early fuel evaporation (intake manifold temperature) controls and evaporative emissions controls.
07.0 Demonstrate proficiency in engine related service.
08.0 Use information technology tools
09.0 Demonstrate personal money-management concepts, procedures, and strategies
10.0 Demonstrate proficiency in A/C system diagnosis and repair.
11.0 Demonstrate proficiency in refrigeration system component diagnosis and repair of compressor, compressor clutch, evaporator, receiver/drier, condenser, etc.
12.0 Demonstrate proficiency in heating and engine cooling systems diagnosis and repair
13.0 Demonstrate proficiency in A/C operating systems and related controls diagnosis and repairs
14.0 Demonstrate proficiency refrigerant recovery, recycling, and handling
15.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives
16.0 Demonstrate proficiency in **general drive train diagnosis, clutch diagnosis and repair**.
17.0 Demonstrate proficiency in transmission & transaxle diagnosis and repair.
18.0 Demonstrate proficiency in drive and half shaft universal and constant-velocity (CV) joint diagnosis and repair.
19.0 Demonstrate proficiency in rear axle diagnosis and repair; ring and pinion gears, differential case assembly and limited slip differential.
20.0 Demonstrate proficiency in drive axle shaft and four-wheel drive/all-wheel drive component diagnosis and repair.
21.0 Describe the importance of professional ethics and legal responsibilities.
22.0 Demonstrate proficiency in the operation and servicing of automatic transmission/transaxle.
23.0 Demonstrate proficiency in transmission/transaxle maintenance, adjustment and in-vehicle transmission/transaxle repair.
24.0 Demonstrate proficiency in off-vehicle transmission/transaxle repair (removal, disassembly, and reinstallation), oil pump and converter.
25.0 Demonstrate proficiency in gear train, shafts, bushings, case, friction units and reaction units.
26.0 Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment

I have received, read and understand all policies and procedures in the 2012-13 Automotive Service Technology 1 & 2 Master Plan of Instruction and agree to abide by them.

Student Signature_____

Date_____