TENNESSEE COLLEGE OF APPLIED TECHNOLOGY
LIVINGSTON

AUTOMOTIVE TECHNOLOGY

Program Syllabus

Fall Trimester, 2024

A Tennessee Board of Regents Institution

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Welcome to Automotive Technology

Dear Student:

The automotive industry has experienced some exciting changes over the past decade. telematics, collision avoidance, infotainment system, GPS navigation systems, and a host of advanced electronic engine controls are just a few of the high-tech gadgets found on today's modern automobile. These highly advanced and technical systems require sophisticated training and knowledge. Gone are the days of the lowly mechanic. Instead the highly intelligent and skilled people repairing these modern marvels of ingenuity are referred to as technicians. Their education, skill, and experience require that they be treated with respect and admiration. The skills necessary to diagnose and repair today's modern automotive systems demand that technicians be well compensated. In the future, these systems will become more complex and difficult to repair. The Automotive Technology program at TCAT Livingston establishes the foundation that allows you to master these high-tech systems and many more to come.

Your recent decision to acquire training as an Automotive Technician means some exciting things will be happening over the next several months. First of all, you can rejoice in the fact that you have chosen one of the premier Automotive Technology programs in the state. Our modern facilities include seven work bays, a computer lab/classroom area, and numerous lab workstations. The shop/lab area contains some of the most modern equipment found in the industry. Our experienced and highly trained staff will do everything possible to ensure you exceed all your employment goals. Together we can begin the transformation that will culminate with the title of Automotive Technician.

Sincerely,

Arthur Crouch

Arthur Crouch, Instructor

Mission, Vision, Program Goals, and Accreditation

AUTOMOTIVE TECHNOLOGY MISSION STATEMENT

The mission of the Automotive Technology program is to provide training in the theory, diagnosis and repair of modern vehicles to meet the occupational and technical needs of citizens of the College's service area who have an interest in this type of employment.

AUTOMOTIVE TECHNOLOGY VISION STATEMENT

The Automotive Technology program is committed to training students to diagnose and repair today's high tech automotive systems using the latest diagnostic procedures. The program recognizes that providing a thorough understanding of all automotive systems with special emphasis on the vehicles electrical and computer systems is tantamount to becoming top notch training program. The program engages students in stimulating learning environment and provides support to ensure student success.

Automotive Technology is an ASE certified Master Automotive Service Technician Program by the National Automotive Technicians Education Foundation. All instruction coincides with the nine instructional areas as recognized by the National Institute for Automotive Service Excellence. Training in each area includes classroom instruction and practice on simulated vehicle systems before receiving hands-on experience diagnosing and repairing "live" vehicles. Upon completion of an instructional area, students will be able to perform procedures expected of an automotive technician employed in the Automotive Field. Once an instructional area is mastered, students advance to the next area until all areas are complete. Certificate level exit points are provided for those students who attain enough knowledge and skill to gain employment before completing all eight areas. During training students prepare to take the ASE certification exams.

PROGRAM GOALS

1. Train students for entry into the automotive repair field.
2. Prepare students to take the ASE certification exams.
3. Encourage professional and ethical behavior to ensure success in a wide range of endeavors.

PROGRAM ACCREDIATION

The Automotive Technology program at Tennessee College of Applied Technology - Livingston is an ASE certified Master Automotive Service Technician Program by the National Automotive Technicians Education Foundation a Joint partner with ASE. According to NATEF, "Programs can earn ASE certification upon the recommendation of the National Automotive Technicians Education Foundation (NATEF). NATEF was founded to develop, encourage, and improve automotive technician education. NATEF examines the structure and resources of training programs and evaluates them against nationally accepted standards of quality. NATEF's precise national standards reflect the skills that students must master. ASE certification through NATEF evaluation ensures that certified training programs meet or exceed industry-recognized, uniform standards of excellence."

About the Instructor

Arthur Crouch has a solid background in the automotive Industry.

His automotive interests began as a young teenager working on his own car and helping his father around their shop. After graduating from Highschool in 2015 he applied at Tennessee college of Applied technology in Livingston to pursue is life long dream of becoming Automotive Technician. In October of 2017 he graduated from the program and become a dedicated technician at Watson Auto sales then swapped to another shop in August of 2020 at Roys auto repair.

In march of 2024 the college contacted him and asked him to come back and become the new automotive Instructor. He jumped rite on it with no hesitation to help the new generation to become techs and mentor them into becoming the best techs possible. Just as his Instructor terry Sparks did with him. At this moment he his in the process of becoming a master certified technician by completing his ASE certified tests.

His Email is Arthur.Crouch@tcatlivingston.edu
His phone number is 931-704-6970

Class Schedule

7:45 A.M. Class Begins

Students must be in the classroom when the morning bell rings. Students outside the building, in the shop area, or on other parts of the campus may be considered absent.

9:50 A.M. Morning Break

Students will receive a 10-minute break.

10:00 A.M. Break Ends

Any student who does not return to the classroom or shop area by 10:00 may be counted absent or tardy. At this time students will begin their lab/shop assignments.

11:30 A.M. Lunch

Lunch. High School Students are required to remain in the classroom during this time.

12:15 A.M. Lunch Ends

All students are required to be back at their workstations by this time. Any student not in the classroom or shop area may be considered absent or tardy.

2:10 P.M. Clean-up Time

Shop cleanliness is an important aspect of presenting a professional appearance. All students are responsible for maintaining the cleanliness of the shop. In addition to daily cleaning assignments, one day each quarter will be devoted to cleaning the major areas of the shop. All shop projects should be completed **BEFORE** this time.

2:30 P.M. Dismissal

All students will be dismissed at 2:30. Students are to remain in the class or shop area until that time. Students are **NOT** allowed in the parking lot until 2:30.
Students are **NOT** to leave until dismissed by the instructor! Because of discrepancies in time keeping the instructor will determine when it is 2:30.

Course Descriptions

AUT 0001-0004 Worker Characteristics

The goal of the course is to improve the essential worker characteristics of students to prepare them for entrance into the workforce. The course is based around the ten traits that have been identified as being needed to foster positive work habits.

AUT 1022 Suspension and Steering:

During this course, the student will learn how to correct suspension geometry and perform four-wheel alignments using the most advanced equipment found in the industry. Steering system design, diagnosis and repair is also covered. Upon completing this course, the student will be also able to perform chassis related service on today's most advanced automobiles. The course prepares students for the Steering and Suspension Technician certification test administered by ASE.

AUT 1012 Brakes:

This course prepares the student to diagnose repair and maintain today's sophisticated braking systems. Instruction starts with general brake theory and hydraulic principles and eventually leads to diagnosing and repairing advanced antilock brake and traction control systems. The course prepares students for the Brakes Technician certification test administered by ASE.

AUT 1030 Technology Foundations

Technology Foundations is an academic learning support course needed by a student to be successful in technical college programs and/or to meet minimum applied mathematics, graphic literacy, and reading, and writing for information competencies as required by faculty in programs. The purpose of learning support is to enhance academic success in technical college programs and increase the likelihood of program completion that will prepare students for career success in their chosen field of study.

AUT 1040 Automotive Safety and Orientation

Automotive Safety and Orientation provides instruction on safety and a basic orientation to automotive technology. Training covers safety procedures related to the automotive industry and working in the classroom/shop environment. The course also orients the student to the daily routines and procedures necessary to be successful in the course.

AUT 2011/2012 Engine Repair:

This course teaches the internal combustion engine from theory and design to diagnosis and repair. The student will learn basic diagnostic testing, proper disassembly, reassembly and machining of the modern automotive engine. The course prepares students for the Engine Repair Technician certification test administered by ASE.

AUT 2021 Heating and Air Conditioning:

Diagnosis and repair of the climate control system is taught in this course. Students will learn to perform A/C system service and properly handling of refrigerants. Automatic Temperature Control systems and computer controls are covered extensively. The course prepares students for the Heating and Air Conditioning Technician certification test administered by ASE.

AUT 3011/3012 Electrical/Electronic Systems:

This course provides the student a comprehensive understanding of modern automotive electrical and electronic systems. Students learn to use modern electronic test equipment to diagnose and repair all major electrical malfunctions. Systems covered include: starting, charging, lighting, supplemental restraints (air bags), driver information systems, vehicle network and multi-plex systems, advanced driver assistance systems, and many more. The course prepares students for the Electrical/Electronic Systems Technician certification test administered by ASE.

AUT 4011/4012 Engine Performance:

In this course, students are taught to diagnose and repair today's complicated engine and powertrain management systems. Topics include: general engine diagnosis, ignition systems, fuel and air systems, emissions systems, computerized engine controls, and engine electrical systems. Special emphasis is placed on the computer and the different systems it controls. The course prepares students for the Engine Performance Technician certification test administered by ASE.

AUT 5021 Automatic Transmission/Transaxles:

Students learn transmission electrical and hydraulic theory, before practicing diagnosis of various transmission failures and concerns. After diagnosis, students disassemble, inspect, and rebuild the internal components of the Automatic transmission. Extra emphasis is placed on the network and electronic controls of the power-train system. After completing the course, students may attempt the Automatic Transmission/Transaxle Technician certification test administered by ASE.

AUT 5011 Manual Drive Trains and Axles:

In this course, students learn the design, repair, and diagnosis of manual drive trains. Topics include diagnosis and repair of manual transmissions, clutches, differentials and drive axles. The course prepares students for the Manual Drive Trains and Axles Technician certification test administered by ASE.

AUT 5030 Hybrid & Electric Vehicles

The Hybrid& Electric vehicle course students learn all about the safety and dangers of the high voltage systems. In this course we also train you the correct way to disable and diagnosis the high voltage system. The course prepares students for the Hybrid & Electric Technician certification test administered by ASE

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Program Objectives

1. Students will demonstrate transportation service technology safety and environmental practices; proper use, maintenance, and storage of basic transportation service equipment and tools; communication skills; interpersonal and employability skills.

2. Students will demonstrate competency in general engine diagnosis; cylinder head and valve train diagnosis and repair; engine block assembly diagnosis and repair; lubrication and cooling systems diagnosis and repair; and fuel, electrical, ignition, and exhaust systems inspection and service.

3. Students will demonstrate general automatic transmission/transaxle diagnosis, transmission/transaxle maintenance and adjustment, in-vehicle transmission/transaxle repair, and off-vehicle transmission/transaxle repair.

4. Students will demonstrate clutch diagnosis and repair; transmission/transaxle diagnosis and repair; drive/CV shaft diagnosis and repair; rear axle theory, diagnosis, and repair; and four-wheel drive components and service.

5. Students will demonstrate general steering and suspension systems diagnosis, steering systems diagnosis and repair, front and rear suspension systems diagnosis and repair, miscellaneous suspension system service, wheel alignment diagnosis, adjustment, and repair, and wheel and tire diagnosis and repair.

6. Students will demonstrate general brake diagnosis, hydraulic system diagnosis and repair, disc and drum brake diagnosis and repair, power assist unit diagnosis and repair, and wheel Bearings, parking brakes, electrical diagnosis and repair, and anti-lock brake and traction control systems.

7. Students will demonstrate general electrical/electronic system diagnosis; battery system diagnosis and service; starting system diagnosis and repair; charging system diagnosis and repair, lighting systems diagnosis and repair; gauges, warning devices, and driver information system diagnosis and repair; horn and wiper/washer diagnosis and repair; and Accessories diagnosis and repair.

8. Students will demonstrate A/C system diagnosis and repair; refrigeration systems component diagnosis and repair; heating and engine cooling systems; operating systems and related controls diagnosis and repair; and refrigerant recovery, recycling, and handling.

9. Students will demonstrate general engine diagnosis; computerized engine controls diagnosis and repair; ignition system diagnosis and repair; in fuel, air induction, and exhaust systems diagnosis and repair; emissions control systems diagnosis and repair; engine related service; and engine electrical systems diagnosis and repair.

10. Student will demonstrate Light Vehicle diesel general diagnosis and repair, light diesel cylinder head and valve train diagnosis and repair, engine block diagnosis and repair, lubrication and cooling systems diagnosis and repair, air induction and exhaust systems diagnosis and repair, and fuel system diagnosis and repair.

Orientation to Technology

The automotive Technology program makes extensive use of technology in the classroom and shop area. All students must learn to use this technology as part of his/her training. Technology training in the shop is usually completed as part of job sheets and live work assignments. Students who need help with the technology should request help from the instructor. Any technology that malfunctions should be reported to the instructor for repair.

Technology in the classroom is an integral part of the training. Students needing help learning or using the technology should ask the instructor for assistance. The instructor will help the student learn and use the technology. In the event further training is needed the instructor will contact student services or Technology Foundations for additional help. Classroom technology that malfunctions should be reported immediately to the instructor who will attempt to rectify the problem. If the instructor is unable to solve the problem the issue will be reported to the IT Help Desk, Instructional Support Coordinator, or other appropriate personnel.

A list of websites and login information may be found on the next page. These sites are used to complete many of the assignments in Automotive Technology. Students should attempt to login as soon as possible. Students having trouble should immediately notify the instructor. The instructor will attempt to provide the necessary help or report the problem to the appropriate authority.

Students should be advised the technology in the Automotive Technology shop and classroom area is to be used for instructional purposes only! For further information on the proper use of technology students should read the Computer and Internet Use Policy for Automotive Technology found on page 10 of this orientation guide.

Computer and Internet Use Policy
for Automotive Technology

Unless specifically granted the instructor, any non-education use of the Tennessee Technology Center at Livingston's (TTCL) computer, network, internet access, or other technology and data systems is expressly forbidden.

If you violate these policies, you could be subject to disciplinary action, up to and including dismissal.

Use of TTCL's computers, networks, and Internet access is a privilege granted by the administration and your instructor and may be revoked at any time for inappropriate conduct carried out on such systems, including, but not limited to:

- Using recreational games or software;
- Accessing youtube.com or any video site unless instructed to do so by the instructor as part of the training program;
- Downloading or accessing files from non-educational websites, or sites not used as part of the training program without the expressed consent of the instructor;
- Accessing non-educational websites including search engines, unless specifically granted by the instructor;
- Installing software, files, or data of any kind without the expressed consent of the instructor;
- Accessing networks, servers, drives, folders, or files to which the student has not been granted access or authorization from someone with the right to make such a grant;
- Making unauthorized copies of school files or other school data;
- Destroying, deleting, erasing, or concealing school files or other School data, or otherwise making such files or data unavailable or inaccessible to the School or to other authorized users of School systems;
- Engaging in unlawful or malicious activities;
- Deliberately propagating any virus, worm, Trojan horse, trap-door program code, or other code or file designed to disrupt, disable, impair, or otherwise harm either the School's networks or systems or those of any other individual or entity;
- Using abusive, profane, threatening, racist, sexist, or otherwise objectionable language in either public or private messages;
- Engaging in private or personal activities, including use of instant messaging and chat rooms;
- Sending, receiving, or accessing pornographic materials;
- Causing congestion, disruption, disablement, alteration, or impairment of School networks or systems;
- Failing to log off any secure, controlled-access computer or other form of electronic data system to which you are assigned, if you leave such computer or system unattended;
- Accessing non-educational websites unless specifically granted by the instructor;
- Defeating or attempting to defeat security restrictions on school systems and applications;
- Attempting to alter or damage computer equipment, software configurations, or files belonging to TTCL, other users, or external networks;
- Attempting unauthorized entry to TTCL's network or external networks
- Violation of copyright or communications laws;
- Violation of software license agreements;

- Transmission of speech not protected by the First Amendment, such as libel and obscenity;
- Not respecting the privacy of other users;
- Using computer accounts, access codes, or network identification codes assigned to others;
- Intentional or willful overuse of connect time, information storage space, printing facilities, processing capacities, or bandwidth capacities;
- The use of sounds and visuals which might disrupt the ability of other students to use the classroom or shop and its resources;

Using School computer systems to access, create, view, transmit, or receive racist, sexist, threatening, or otherwise objectionable or illegal material, defined as any visual, textual, or auditory entity, file, or data, is strictly prohibited.

Ownership and Access of Electronic Mail, Internet Access, and Computer Files; No Expectation of Privacy

TTCL owns the rights to all data and files in any computer, network, or other information system used in the School and to all data and files sent or received using any school system or using the School's access to any computer network, to the extent that such rights are not superseded by applicable laws relating to intellectual property or privacy. The School also reserves the right to monitor electronic mail messages (including personal/private/instant messaging systems) and their content, as well as any and all use by students of the Internet and of computer equipment used to create, view, or access e-mail and Internet content. Students must be aware that the electronic mail messages sent and received using School equipment or School-provided Internet access, including web-based messaging systems used with such systems or access, are not private and are subject to viewing, downloading, inspection, release, and archiving by School officials at all times. The School has the right to inspect any and all files stored in private areas of the network or on individual computers or storage media in order to assure compliance with School policies and state and federal laws. No student may access another student's computer, computer files, or electronic mail messages without prior authorization from either the student or an appropriate School official.

If you violate these policies, you could be subject to disciplinary action, up to and including dismissal.

This policy does not replace or negate all or any part of a school wide policy. It is to be used in conjunction with school policy to further restrict computer and internet usage in the Automotive Technology Program. Where Automotive Technology policy’s directives are more defined or restrictive than school policy; the Automotive Technology policy will take precedence.

Rules and Policies

Students are not to leave the classroom or shop area without the permission of the instructor. Students leaving without permission will be subject to disciplinary action up to including termination.

No student shall operate a motor vehicle without a valid driver's license. Any student who does not have a valid driver's license in his possession must notify the instructor immediately.

Smoking is not permitted in the shop or classroom area. Electronic cigarettes are also prohibited in the shop/classroom. Smoking is only allowed in the designated smoking huts located around campus. Auto Tech students who smoke on campus must place their cigarette butts in the proper receptacles.

The instructor's classroom desk is off limits. Anything in or on the desk is also off limits. Students violating this rule will be disciplined accordingly.

No student shall use tools belonging to another student without that student's permission.

No student shall use the instructor's tools without his expressed permission.

All tools must be used in the proper manner and returned to their proper place.

EPA and OSHA regulations must be followed at all times. Students violating this policy may be subject to school discipline. Students may also be subject to legal action by the appropriate authorities.

Safety precautions must be followed at all times. Students jeopardizing their safety, the safety of others, or committing safety violations will be disciplined up to and including termination.

All rules and policies cannot be covered on this document. Therefore, students are required to exercise proper judgment and conduct themselves in an appropriate manner at all times.

The Computer use and software policy must be followed at all times.

Safety Glasses must be worn in the shop area at all times.

Safety Rules and Regulations

1. Use common sense!
2. Eye protection must be worn at all times.
3. Do not run in the shop.
4. Do not use any piece of equipment that does not have all safety devices in place and working properly.
5. Do not use any piece of equipment that is not in proper working condition.
6. Do not use any tool or piece of equipment unless you have been trained in its use.
7. When raising a vehicle with a floor jack always use jack stands.
8. Never work beneath a vehicle unless it is properly supported.
9. When hoisting an engine stay clear of the area directly beneath it.
10. When raising a vehicle on a lift, make sure the car is securely supported.
11. Never start a vehicle unless you are sure all the necessary systems are working properly (**brakes**, trans., steering, etc.).
12. Never start a vehicle unless you are sure everyone is clear.
13. Use caution when using a press. Some parts may shatter and cause severe injury.
14. Never stand directly in front of or directly behind a vehicle.
15. Absolutely no horseplay is allowed in the shop or classroom.
16. Appropriate clothing should be worn at all times.
17. Always use exhaust hoses to vent dangerous fumes.
18. No smoking in the shop or classroom.
19. Use caution at all times.

Diplomas, Certificates, and Other Awards

DIPLOMAS

Automotive Technician Diploma	1512 hours
Automotive and Hybrid/Electric Technician Diploma	1728 hours

CERTIFICATES

Brake and Chassis Technician	432 hours
Automotive Technician Apprentice certificate	864 hours
Automotive Service Technician certificate	1296 hours

OTHER AWARDS

Supplemental Training certificates may be given for specialized industry training. The individual training programs will determine supplemental certificate requirements.

Course Outline for Automotive Technology

I. TECHNOLOGY FOUNATIONS 30 HOURS

A. Reading
B. Basic Writing
C. Graphic Literacy
D. Applied Mathematics

II. AUTOMOTIVE SAFETY and ORIENTATION 24 HOURS

A. Safety
B. Tools and Equipment
C. Communication
D. Interpersonal and Employability Skills

III. BRAKES 150 HOURS

A. General Brake Systems
B. Hydraulic System
C. Drum Brakes
D. Disc Brakes
E. Power Assist Units
F. Miscellaneous Systems (Wheel Bearings, Parking Brakes, Electrical, etc.)
G. Electronic Brake, Traction and Stability Control System

IV. SUSPENSION AND STEERING 150 HOURS

A. General Suspension and Steering
B. Steering Systems
C. Suspension Systems
D. Related Steering and Suspension System Service
E. Wheel Alignment
F. Wheels and Tires

V. ENGINE REPAIR I/II 150 HOURS

A. General Engine
B. Cylinder Head & Valve Train
C. Engine Block Assembly, Diagnosis and Repair
D. Lubrication and Cooling Systems
E. Fuel Electrical, Ignition, and Exhaust Systems (Required only for A1 ASE certification test.)

VI. HEATING AND AIR CONDITIONING 108 HOURS

A. A/C System
B. Refrigeration System Components

C. Heating, Ventilation, and Engine Cooling Systems
D. Operating Systems and Related Controls
E. Refrigerant Recovery, Recycling, and Handling

VII. ELECTRICAL/ELECTRONIC SYSTEMS I/II 378 HOURS

A. General Electrical/Electronic Systems
B. Batteries
C. Starting Systems
D. Charging Systems
E. Lighting Systems
F. Gauges, Warning Devices, and Driver Information Systems
G. Horn and Wiper/Washer Systems
H. Accessories

VIII. ENGINE PERFORMANCE I/II 328 HOURS

A. General Engines Diagnosis
B. Computerized Engine Controls
C. Ignition Systems
D. Fuel, Air induction and Exhaust Systems
E. Emission Control Systems
F. Engine Related Service
G. Engine Electrical Systems (Required only for A8 ASE Certification Test)
    1. Battery
    2. Starting
    3. Charging

IX. AUTOMATIC TRANSMISSION/TRANSAXLE 70 HOURS

A. General Transmission/Transaxle Diagnosis
B. In-Vehicle Transmission/Transaxle Maintenance and Repair
C. Off-Vehicle Transmission/Transaxle Repair

X. Manual Drive Train and Axles 70 HOURS

A. General Drive Train
B. Clutch Diagnosis and Repair
C. Transmissions/Transaxles Diagnosis and Repair
D. Drive Shaft, Half Shaft and Universal Joint/Constant Velocity Joints
E. Drive Axle Diagnosis and Repair

1. Ring and Pinion gears and Differential Case
2. Limited Slip Differential
3. Drive Axle Shafts

F. Four Wheel Drive/All Wheel Drive

XI. Hybrid & Electric Vehicles 216 HOURS

A. High voltage safety
B. Dangers of high voltage systems
C. Diagnosing high voltage systems
D. Disabling high voltage systems

XII. WORKER CHARACTERISTICS* One six-hour course per trimester. 24 HOURS

A. Attendance
B. Character
C. Teamwork
D. Appearance
E. Attitude
F. Productivity
G. Organizational Skills
H. Communication
I. Cooperation
J. Respect

Training Program Sequence

All students will start in AUT 1031 Automotive Safety and Orientation and AUT 1040 Technology Foundations. After completing AUT 1030 Safety course students, will enroll in the AUT 1011 Brakes course. Once completing AUT 1012 Brakes, the student will be enrolled in AUT 1021 Suspension and Steering. AUT 0001 Worker Characteristics is open throughout the trimester and is a cumulative grade compiled during the trimester. All six courses must be completed in the first trimester or a 432-hour timeframe.

After completing the courses listed in the first trimester, the student will be enrolled in the current course being taught to the rest of the class. The following is a **guideline** that can be used. Other than the first trimester, the actual starting sequence may vary.

1st Trimester

AUT 1030 Technology Foundations	30 hours	
AUT 1040 Automotive Safety and Orientation	24 hours	
AUT 1012 – (A5) Brakes	150 hours	
AUT 1022 – (A4) Suspension & Steering	150 hours	
AUT 1050 – Basic Electrical	30 hours	
AUT 2011 – Engine Repair l	42 hours	
AUT 0001 – Worker Characteristics	6 hours	Total Hours: 432

***Exit Point:** *Brake and Chassis Technician Certificate*

2nd Trimester

AUT 2012 - Engine Repair ll	108 hours	
AUT 2021- (A7) Heating and Air Conditioning	108 hours	
AUT 3011- Electric & Electronic Systems l	210 hours	
AUT 0002 - Worker Characteristics	6 hours	Total Hours: 432

***Exit Point:** *Automotive Technician Apprentice Certificate*

3rd Trimester

AUT 3012 - Electrical/Electronic Systems ll	168 hours	
AUT Engine Performance l	258 hours	
AUT 0003 - Worker Characteristics	6 hours	Total Hours: 432

***Exit Point:** *Automotive Service technician Certificate*

4th Trimester

AUT 4012 - Engine Performance ll	70 hours
AUT 5011- (A3) Manual Transmission and Drivetrain	70 hours
AUT 5021- (A2) Automatic Transmission /Transaxle	70 hours
AUT 0004 - Worker Characteristics	6 hours

***Exit Point:** *Automotive technician Diploma*

4th Trimester

AUT 5030 – Hybrid and Electric Vehicles	216 hours	Total Hours: 432

***Exit Point:** *Automotive and Hybrid/Electric Technician Diploma*

Total Program = 1728 hours

Grades

Students will receive two grades for each course. One in Skill and one in Theory. The Skill and Theory grades will be used to determine the final grade for the course.

Skill		**Theory**	
Performance Tests	15 pts	Test and Quiz Average	25 pts
Tool Check	10 pts	Final Exam	5 pts
Job Sheets	45 pts		
Skill Grade =	70 pts	Theory Grade =	30 pts

Final Course Grade Calculation

Skill Grade	30%
Theory Grade	70%
Final Course Grade =	100%

Grades for the Worker Characteristics Course are assigned in the following areas.

Attendance	10 %
Character	10 %
Teamwork	10 %
Appearance	10 %
Productivity	10 %
Attitude	10 %
Organizational Skills	10 %
Communication	10%
Cooperation	10%
Respect	10 %
Worker Characteristics Grade	100%

Specific criteria for each category may be found on the Worker Characteristic Rubric Sheet. Those sheets may be found on the eLearn Course website.

Warning about Grades!

A student must maintain a:

"D" (60) or better average **per course** and an overall 2.0 GPA or better **per term.**

The following scale will be used to determine letter grades:

A = 90 – 100
B = 80 – 89
C = 70 – 79
D = 60 – 69
F = 0 – 59

A student must earn a "D" (60) or better per course for each term and an overall 2.0 GPA or better per term.

A "D" average is 60-69. Failure to attain at least a "D" average at the end of the trimester in any course will result in suspension at the end of the term.

A 2.0 GPA is a "C" average. Failure to attain at least an overall 2.0 GPA for the trimester will result in suspension at the end of the term.

The GPA is weighted! Courses with fewer hours count LESS than courses with more hours.

A student who fails during any term to attain a cumulative GPA at or above the level indicated below for the customary clock hours attempted or the average grade per course, will be placed on suspension at the end of the term.

The following grade point system is to be used in grade point average (GPA):

1. A: 4 points per customary clock hour
2. B: 3 points per customary clock hour
3. C: 2 points per customary clock hour
4. D: 1 points per customary clock hour
5. F: 0 points per customary clock hour

You are never finished with everything, completed all your assignments or, have nothing to do! You are training to be an Automotive Technician. I expect you to train for 6 hours every school day. The required assignments and tests are just a minimum. I would hope that you would want to excel and surpass the minimum. If you have met the minimum requirements, I expect you to improve your knowledge and hone your skills.

Do not forget that several aspects of your grade are ongoing throughout the trimester. Worker characteristics does not end just because you took all the required tests, etc. You will be evaluated every day, until the very end of the grading period.

You must complete all assignments in a course to receive credit for that course!

Worker Characteristics Rubric

Worker Characteristic Grade Sheet

STUDENT NAME:

PROGRAM: Automotive Technology

TRIMESTER:

Demonstrated Characteristic	Exceeds Expectations 4	Meets Expectations 3	Needs Improvement 1	Unacceptable 0
Attendance: Attends class; arrives/leaves on time. Notifies instructor in advanced of planned absences. Signs in and out as required.				
Character: Displays loyalty; honesty trustworthiness, dependability, reliability, initiative, self-discipline, and self-responsibility. Possesses good work ethic.				
Teamwork: Respects the rights of others. Works well with team members, cooperatives, and displays a customer service attitude. Seeks opportunities for continuous learning. Avoids conflict.				
Appearance: Displays appropriate dress, grooming, hygiene, and etiquette. Wears uniform.				
Attitude: Demonstrates a positive attitude; appears self-confident; has realistic expectations of self. Follows instructions without objections and in a timely manner.				
Productivity: Completes assignments in a timely manner. Makes up assignments punctually. Follows safety practices. Keeps work area neat and clean. Follows directions and procedures. Participates fully in assignments. Completes vehicle repairs in a timely manner.				
Organizational Skills: Keeps bay and work area clean and neat; Participates fully in shop cleaning.Keeps tools clean and well organized; displays stress and time management techniques; Demonstrates flexibility in handling change.				
Communication: Displays appropriate nonverbal, (eye contact, body language), oral, auditory, and written skills.				
Cooperation: Displays leadership skills; Appropriately handles criticism, conflicts, and complaints; demonstrates problem-solving capability; maintains appropriate relationships with supervisors and peers; follows chain of command.				
Respect: Deals appropriately with cultural/racial diversity; does not display racist or gender discriminatory attitudes; Responds appropriately to all situations and people; Uses others' tools only with permission; Repects the property of others.				
COLUMN TOTALS:	0	0	0	0

Total Accumulated Points: 0

Final Worker Characteristics Grade: 0

Instructor Signature: Date:

Student Signature: Date:

Job Sheets Grade Rubric

Job sheets are the hands-on tasks performed in the shop. Each job sheet will have the competencies it covers listed at the top. Students will receive **a grade of 0-100 on each job sheet**. The score achieved on the job sheet will be recorded in eLearn (D2L). The job sheet grades constitute 45% of the student's final average.

0	***No exposure***	*Little or no information or practice provided during the program; complete training required – Student was not present for some or all of the training. Student may have been absent or did not attempt the skill.*
1-70	***Exposure only***	*General information provided with little or no practice time; close supervision needed; additional training required – Student was present for training with minimal participation. Student may or may not have gained ability or skill from the training. Student may have attempted the skill but may not have gained necessary abilities to become skilled.*
70-79	***Minimally Skilled***	*Has practiced job during training program; additional training is required to develop skill – Student participated fully and completed the task successfully with 1. multiple attempts during the process; or 2. relied heavily on assistance from the instructor or other students; or 3. shows insufficient knowledge of the job just performed.*
80-89	**Moderately skilled**	*Has performed job independently during training program; but struggled with some aspect of the skill. May need addition training or practice in the future.*
90-99	***Skilled***	*Has performed job independently during training program; limited additional training may be required.*
100	***Proficient***	*Can perform job independently with no additional training.*

Failure to have job sheets signed in all required places with result in a deduction. Blank or incorrect answers will also result in deductions.

Mid-term Job sheet grades for Engine Performance and Electrical will not be averaged with the last part of the term's grades. This grade is only for informational purposes and only reflects your achievement on the work completed not on the entire trimester's body of work.

Dress Code

Monday through Thursday students must wear the official TCAT Automotive Technology tee-shirt. On most Fridays students will be allowed to wear a shirt of their choosing as long as it meets the requirements of this dress code. During special school functions that fall on Friday the students may be required to wear their regular Automotive Technology tee-shirt. The tee-shirt may not be modified in any way (no removing sleeve cutting neck, etc) and must be replaced if it becomes torn or excessively worn in any way. Any student that does not wear their proper Automotive Technology shirt when required will be in violation of the Automotive Technology Policies and/or the Dress Code Policy.

Students who attend class without wearing a proper Automotive Technology tee shirt will be given a verbal warning on their first offense during the trimester. Second or repeat offenses will result in the student being asked to leave class and return in the proper tee-shirt.

Since students will be greeting customer's, driving and returning customer's vehicles, and explaining vehicle malfunctions to customers, students are expected to dress in a professional manner at all times. Therefore, students are not allowed to wear the following items: basketball shorts, sleep pants, jogging/running pants, see-through clothing, tank tops, sleeveless shirts of any kind, sandals, flip-flops, open-toed shoes, crocs, any shoe that exposes part of the foot, clothing with holes that expose underwear (may be taped over), pants with excessive tears or holes. Wearing any clothing that is deemed to be a safety hazard by the instructor is considered a violation of the dress code.

There is no drees code for jewelry. However, there are safety considerations when working in the shop and certain procedures will require that you remove items. Failure to do so will be a violation of safety rules and regulations and this dress code. You will be disciplined accordingly.

Students who violate any portion of the dress code may be sent home immediately by the instructor or asked to remedy the dress code violation. Repeat violations may result in further disciplinary action.

Required Tool List

For Automotive Technology
2023-2024 School Year

Students must maintain and keep the required tool set in the shop during the entirety of training. Students may purchase tools from the school bookstore or from any other seller. High quality tools are strongly recommended but, students may purchase any brand or quality tools they wish.

General Description:

Mechanics Tool Set - Approximately 241 pcs.
Pliers Set
Tool Box or Cart
Rechargeable Work Light (No incandescent or disposable battery powered)
Safety Glasses
Screwdriver Set
Cordless Ratchet
Fender Cover
DMM (digital multimeter)

Student tool set must contain the following:

¼" Drive:	**Shallow Socket Set – Metric and SAE** **Deep Socket Set – Metric and SAE** **Ratchet and Extension**
3/8" Drive:	**Shallow Socket Set – Metric and SAE** **Deep Socket Set – Metric and SAE** **Ratchet and extension** **5/8 and 13/16 Spark Plug Sockets**
½" Drive:	**Socket Set - Metric** **Socket Set - SAE** **Ratchet and Extension**
Wrench Sets:	**Metric Set and SAE Set**
Screwdriver Set:	**2 pc Phillips and 2 pc Slotted**
Pliers:	**Needle Nose, Slip Joint, Channel Locks**
Cordless Ratchet:	**Rechargeable 3/8 or ¼ in drive cordless ratchet.**
Impact Socket Set:	**Deep Well Metric- 10-21mm**
Work Light:	**Rechargeable LED work-light**
Tool Box or Cart:	**Bottom Roll Chest or Tool Cart with Drawers (lockable)**
Hex Keys or Bit Sets:	**Metric and Standard**
Fender Cover:	**1**
Safety Glasses:	**1 pair**

Suicide Statement

As part of the College's Culture of Care & Support we provide campus resources to create access for you to maintain your safety, health, and well-being. We understand that as a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug concerns depression, difficulty concentrating and/or lack of motivation. These stressful moments can impact academic performance or reduce your ability to engage. The College offers services to assist you with addressing these or ANY other concerns you may be experiencing. If you or someone you know are suffering from any challenges, you should reach out for support. You can seek confidential mental health services available on campus in Student Services Office. Another helpful resource is TN Suicide Prevention Network at www.tspn.org.

Websites

Computer Login:

You must log-on to computers in the classroom and shop.
Use the following login for the classroom computers:

User: ./student
Password: Password123

***You may also log in with your s number email address and your email password.**

https://elearn.ttcworkforce.org

Username: your s number
Password: Password123

www.sp2.org

Username: your s number
Password: Password123

https://www.acdelcotraining.com

Username: your s number
Password: Password123

https://www.nc3certs.com/

Username: your s number **email address**
Password: Password123

https://tcatlivingston.electude.com

Username: your s number
Password: Password123

https://college.fordservicetraining.com

You will self-register for this site. The instructions and code are on the elearn (D2L) website under course content.

https://toyotacertification.com

The instructor will register you for this website.

https://www.shopkeypro.com

Use the following Credentials to log-on to the ShopKey Pro website:

Ask Instructor to enter credentials

Syllabus Agreement

I, _____, have read the syllabus for the Automotive Technology class and understand everything it contains. I agree to abide by the terms and conditions contained within.

Signed: _____ Date: _____