As either a cover sheet or addendum, the instructor should provide:

Instructor Name
Course Name and Number
Section Number and Synonym
Course Time and Location
Office Hours
Office Location and Number
Phone, Email, Website, etc.
Arranging Conferences/Appointments

COURSE SYLLABUS

AUMT 2437 (AUT 2024) AUTOMOTIVE ELECTRONICS (4-3-3). Topics address electrical principles, semiconductor and integrated circuits, digital fundamentals, microcomputer systems, computerized engine controls, and electrical test equipment as applied to automotive technology. Prepares students for ASE certification tests. Laboratory fee

Prerequisites: Department approval or consent of instructor.

TEXTS AND REFERENCES USED:

1. **Diagnosis & Troubleshooting of Auto Electrical / Electronics Systems,** Prentice Hall 6th Edition, James D. Halderman, ISBN: 9780132551557
2. Manufacturer's service manuals
3. Selected films and charts from various sources
4. Automotive books can be found in the RVS bookstore located downstairs in Bldg. G

INSTRUCTOR SPECIFIC INFORMATION

The following instructor information should be on the syllabus:

- *instructor's name*
- *phone number(s) (instructor's office phone or Voice Box for adjunct instructors)*
- *office hours and location of office or means of accessing virtual office hours*
- *information on how conferences outside of office hours can be arranged*
- *ACC e-mail address*
- *other avenues for contacting the professor, as appropriate (through BlackBoard, e.g.)*

As a general rule, instructors should avoid interacting with students through social media or providing personal phone numbers.

COURSE DESCRIPTION

- **Credit Hours: *4***
- **Classroom Contact Hours per week: *3 (for a 16-week class)***
- **Laboratory Contact Hours per week: *3 (for a 16-week class)****

**For clarity and alignment with SACS-COC expectations, the credit and contact hours should be explicitly stated. An example for a 16-week lab science class is given. Other non-classroom activity hours should be used as appropriate (e.g., clinical, internship, etc.)*

The description from the college catalog should also go here and can be added to as needed.
If there is a required field activity, service-learning, or other activity outside of class, that should be mentioned, as well other general information that seems appropriate.

If it is a workforce (WECM) course rather than a transfer (ACGM) course, some language about transferability should also be added, such as:
"Transferability of workforce courses varies. Students interested in transferring courses to another college should speak with their Area of Study (AoS) advisor, Department Chair, and/or Program Director."

REQUIRED TEXTS/MATERIALS/SOFTWARE

Any required textbooks, readings, laboratory manuals, or software should be listed here. One may also list optional texts, such as study guides.

DISTANCE EDUCATION *(for online or hybrid courses only)*

Advise students, many of whom may be new to online learning, about the differences between online and traditional face-to-face learning. In particular, advise students of the time management and study skills required to be a successful online student. Encourage students new to distance education to review the ACC Distance Education General Information available at https://online.austincc.edu/faq/ Likewise, use of the college approved learning management system should be clearly stated for hybrid and online courses. Some suggested wording might be:
"Students will use the Blackboard learning management system for assignment instructions, submitting assignments, and collaboration."

STUDENT TECHNOLOGY SUPPORT

Austin Community College provides free, secure drive-up WiFi to students and employees in the parking lots of all campus locations. WiFi can be accessed seven days a week, 7 am to 11 pm. Additional details are available at Student Technology Access. Students who do not have the necessary technology to complete their ACC courses can request to borrow devices from Student Technology Services. Available devices include iPads, webcams, headsets, calculators, etc. Students must be registered for a credit course, Adult Education, or Continuing Education course to be eligible. For more information, including how to request a device, visit Student Technology Access. Student Technology Services offers phone, live-chat, and email-based technical support for students and can provide support on topics such as password resets, accessing or using Blackboard, access to technology, etc. To view hours of operation and ways to request support, visit Student Technology Access

COURSE POLICIES

Faculty should detail their course policies. Many of these policies are defined by departments and will therefore be the same across all courses of that discipline.

Attendance/Class Participation

Each instructor should clearly express their attendance and class participation policies. The instructor also needs to be explicit about whether the class is synchronous or asynchronous, and what activities, e.g., discussion boards, have mandatory participation. If the course has a laboratory component, clear guidance is needed on how the laboratory activities will be conducted.

If there are specific policies for field or laboratory activities, they could be included here. Some suggested wording is:
*"*Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class.*"*

Or for online courses:
"Regular and timely class participation in discussions and completion of work is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class."

And to cover situations where classes are canceled because of weather, pandemic, or other emergencies:
"The student is responsible for communicating with their professor during the closure and completing any assignments or other activities designated by their professor."

Withdrawal Policy

This should be clearly stated. The College defines withdrawals as occurring after the official reporting date of the semester, typically the 12th class day. In addition, the Legislature has mandated the Rule of Six (see below). There may also be financial aid issues.

Some possible wording might be:
"It is the responsibility of each student to ensure that his or her name is removed from the rolls should they decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is recorded before the Final Withdrawal Date. The Final Withdrawal Date for this semester is [insert date here]. The student is also strongly encouraged to keep any paperwork in case a problem arises. Students are responsible for understanding the impact that withdrawal from a course may have on their financial aid, veterans' benefits, and international student status. Per state law, students enrolling for the first time in Fall 2007 or later at any public Texas college or university may not withdraw (receive a "W") from more than six courses during their undergraduate college education. Some exemptions for good cause could allow a student to withdraw from a course without having it count toward this limit. Students are strongly encouraged to meet with an advisor when making decisions about course selection, course loads, and course withdrawals."

Missed Exam and Late Work Policies

Each instructor should clearly express their policies with regard to missed exams, late homework or laboratory exercises, etc. Again, this helps immensely when dealing with student grade disputes.

COLLEGE POLICIES

These are statements of which all students should be aware and which are consistent across the institution**.** The wording of these statements should not be changed by instructors.

Health & Safety Protocols

Operational areas of ACC campuses and centers are fully open and accessible through all public entrances. The college encourages its staff, faculty, and students to be mindful of the well-being of all individuals on campus. If you feel sick, feverish, or unwell, please do not come to campus.

Some important things to remember:

- If you have not done so, ACC encourages all students, faculty, and staff to get vaccinated. COVID-19 vaccines are now widely available throughout the community. Visit Vaccines.gov to find a vaccine location near you.

- Campuses are open to faculty, staff, and students~~.~~ The college and its departments and offices may invite internal *and* external guests to their events and activities, though access is still restricted for external parties seeking to host activities at ACC. The college's Appian Health Screening App remains available to everyone who visits campus. This continues to be a good way to check your own health before coming to class or work.

- If you are experiencing COVID-19-related symptoms, please get a COVID-19 test as soon as possible before returning to an ACC facility. Testing is now widely available. To find testing locations near you, click this link.

- If you test positive, please report it on the ACC self-reporting tool located here.

- ACC continues to welcome face masks on campus. Per CDC guidelines, face masks remain a good way to protect yourself from COVID-19.

- The college asks that we all continue to respect the personal space of others. We are encouraging 3 feet of social distancing.

- Please be sure to carry your student, faculty, or staff ID badge at all times while on campus.

Because of the ever changing situation, please go to ACC's Covid website for the latest updates and guidance.

Statement on Academic Integrity

Austin Community College values academic integrity in the educational process. Acts of academic dishonesty/misconduct undermine the learning process, present a disadvantage to students who earn credit honestly, and subvert the academic mission of the institution. The potential consequences of fraudulent credentials raise additional concerns for individuals and communities beyond campus who rely on institutions of higher learning to certify students' academic achievements and expect to benefit from the claimed knowledge and skills of their graduates. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, falsifying documents, or the inappropriate use of the college's information technology resources. Further information is available at the Academic Integrity website. *Any course specific policies, expectations, or procedures could be included here.*

Student Rights & Responsibilities

Students at ACC have the same rights and protections under the Constitution of the United States. These rights include freedom of speech, peaceful assembly, petition and association. As members of the community, students have the right to express their own views, but must also take responsibility for according the same rights to others and not interfere or disrupt the learning environment. Students are entitled to fair treatment, are expected to act consistently with the values of the college, and obey local, state, and federal laws. Student Rights & Responsibilities. As a student of Austin Community College you are expected to abide by the Student Standards of Conduct.

Senate Bill 212 and Title IX Reporting Requirements

Under Senate Bill 212 (SB 212), the faculty and all College employees are required to report any information concerning incidents of sexual harassment, sexual assault, dating violence, and stalking committed by or against an ACC student or employee. Federal Title IX law and College policy also require reporting incidents of sex- and gender-based discrimination and sexual misconduct. This means faculty and non-clinical counseling staff cannot keep confidential information about any such incidents that you share with them. If you would like to talk with someone confidentiality, please contact the District Clinical Counseling Team who can connect you with a clinical counselor on any ACC campus: (512) 223-2616, or to schedule online, go to the Counseling website. While students are not required to report, they are encouraged to contact the Compliance Office for resources and options: Charlene Buckley, District Title IX Officer, (512) 223-7964; compliance@austincc.edu. If a student makes a report to a faculty member, the faculty member will contact the District Title IX Officer for follow-up.

Student Complaints

A defined process applies to complaints about an instructor or other college employee. You are encouraged to discuss concerns and complaints with college personnel and should expect a timely and appropriate response. When possible, students should first address their concerns through informal conferences with those immediately involved; formal due process is available when informal resolution cannot be achieved. Student complaints may include (but are not limited to) issues regarding classroom instruction,

college services and offices on the basis of actual or perceived race, color, national origin, religion, age, gender, gender identity, sexual orientation, political affiliation, or disability. Further information about the complaints process, including the form used to submit complaints, is available at the Student Complaint Procedures website.

Statement on Privacy

The Family Educational Rights and Privacy Act (FERPA) protects confidentiality of students' educational records. Grades cannot be provided by faculty over the phone, by e-mail, or to a fellow student. *Class grades should be posted in Blackboard, and this could be mentioned here.*

Recording Policy

To ensure compliance with the Family Education Rights and Privacy Act (FERPA), student recording of class lectures or other activities is generally prohibited without the explicit written permission of the instructor and notification of other students enrolled in the class section. Exceptions are made for approved accommodations under the Americans with Disabilities Act. Recording of lectures and other class activities may be made by faculty to facilitate instruction, especially for classes taught remotely through BlackBoard or another platform. Participation in such activities implies consent for the student to be recorded during the instructional activity. Such recordings are intended for educational and academic purposes only.

Safety Statement

Health and safety are of paramount importance in classrooms, laboratories, and field activities. Students are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Emergency Procedures posters and Campus Safety Plans are posted in each classroom and should be reviewed at the beginning of each semester. All incidents (injuries/illness/fire/property damage/near miss) should be immediately reported to the course instructor. Additional information about safety procedures and how to sign up to be notified in case of an emergency can be found at the Emergency Management website. Everyone is expected to conduct themselves professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual may be immediately dismissed from the day's activity and will be referred to the Dean of Student Services for disciplinary action. In the event of disruption of normal classroom activities due to an emergency situation or an outbreak of illness, the format for this course may be modified to enable completion of the course. In that event, students will be provided an addendum to the class syllabus that will supersede the original version.

Campus Carry

The Austin Community College District concealed handgun policy ensures compliance with Section 411.2031 of the Texas Government Code (also known as the Campus Carry Law), while maintaining ACC's commitment to provide a safe environment for its students, faculty, staff, and visitors. Beginning August 1, 2017, individuals who are licensed to carry (LTC) may do so on campus premises except in locations and at activities prohibited by state or federal law, or the college's concealed handgun policy. It is the responsibility of license holders to conceal their handguns at all times. Persons who see a handgun on

campus are asked to contact the ACC Police Department by dialing 512-223-1231. Please refer to the concealed handgun policy online at the Campus Carry website.

Discrimination Prohibited

The College seeks to maintain an educational environment free from any form of discrimination or harassment including but not limited to discrimination or harassment on the basis of race, color, national origin, religion, age, sex, gender, sexual orientation, gender identity, or disability.Faculty at the College are required to report concerns regarding sexual misconduct (including all forms of sexual harassment and sex and gender-based discrimination) to the Manager of Title IX/Title VI/ADA Compliance. Licensed clinical counselors are available across the District and serve as confidential resources for students.
Additional information about Title VI, Title IX, and ADA compliance can be found in the ACC Compliance Resource Guide.

Use of ACC email

All College e-mail communication to students will be sent solely to the student's ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify students of any college- related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Information about ACC email accounts, including instructions for accessing it, are available at the ACC Email Q&A website.

Use of the Testing Center

The Testing Centers will allow only limited in person testing and testing time will be limited to the standard class time, typically one and one-half hours. Specifically, only the following will be allowed in the Testing Centers:

- Student Accessibility Services (SAS) Testing: All approved SAS testing
- Assessments Tests: Institutionally approved assessment tests (e.g., TSIA or TABE)
- Placement Tests: Placement tests (e.g., ALEKS)
- Make-Up Exams (for students who missed the original test): Make-up testing is available for all lecture courses but will be limited to no more than 25% of students enrolled in each section for each of four tests
- Programs incorporating industry certification exams: Such programs (e.g., Microsoft, Adobe, etc.) may utilize the ACC Business Assessment Center for the industry certification exams (BACT) at HLC or RRC

The instructor should provide additional information about how they will conduct examinations and other assessments here.

STUDENT SUPPORT SERVICES

The success of our students is paramount, and ACC offers a variety of support services to help, as well as providing numerous opportunities for community engagement and personal growth.

Student Support

ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these campus services and resources is available at the Student Resources website. A comprehensive array of student support services is available online at the Student Support website.

Student Accessibility Services

Austin Community College (ACC) is committed to providing a supportive, accessible, and inclusive learning environment for all students. Each campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through Student Accessibility Services (SAS). Students are encouraged to request accommodations prior to the beginning of the semester, otherwise the provision of accommodations may be delayed. Students who have received accommodations from SAS for this course will provide the instructor with the legal document titled "Faculty Notification Letter" (FNL) through the Accessible Information Management (AIM) portal. Until the instructor receives the FNL, accommodations should not be provided. Once the FNL is received, accommodations must be provided. Accommodations are not retroactive, so it is in the student's best interest to request their accommodations as soon as possible prior to the beginning of the semester. Please contact SAS@austincc.edu for more information.

Academic Support

ACC offers academic support services on all of its campuses. These services, which include online tutoring, academic coaching, and supplemental instruction, are free to enrolled ACC students. Tutors are available in a variety of subjects ranging from accounting to pharmacology. Students may receive these services on both a drop-in and referral basis. An online tutor request can be made here: Online Tutoring Request. Additional tutoring information can be found here: Online Tutoring.

Library Services

ACC Library Services offers both in-person and extensive online services, with research and assignment assistance available in-person during limited hours of service. Although all college services are subject to change, plans include ACC students signing up for study space and use of computers at open libraries, extensive online instruction in classes, online reference assistance 24/7 and reference with ACC faculty librarians.
In addition, currently enrolled students, faculty and staff can access Library Services online (also 24/7) via the ACC Library website and by using their ACCeID to access all online materials (ebooks, articles from library databases, and streaming videos). ACC Libraries offer these services in numerous ways such as: "Get Help from a Faculty Librarian: the 24/7 Ask a Librarian chat service," an online form for in-depth research Q and A sessions, one-on-one video appointments, email, and phone (voicemail is monitored regularly).

- Library Website
- Library Information & Services during COVID-19
- Ask a Librarian 24/7 chat and form
- Library Hours of Operation by Location

- Email: library@austincc.edu

Parent and Family Engagement Services

ACC understands how important parent and family support is to every student's college journey. From parents and siblings to stepparents, grandparents, partners, and loved ones, the Parent and Family Engagement Office at ACC is committed to empowering families to support student success. The office provides a family orientation to ACC, free workshops explaining the world of higher education (financial aid, student resources, career and transfer services, etc.), a monthly newsletter full of student success tips, and a website designed to answer family members' frequently asked questions. All students, especially first-generation students, are encouraged to share these resources with their families and invite them to be part of the Riverbat experience. Contact familyengagement@austincc.edu or visit the Parent & Family Engagement website for more information.

Student Organizations

ACC has over seventy student organizations, offering a variety of cultural, academic, vocational, and social opportunities. They provide a chance to meet with other students who have the same interests, engage in service-learning, participate in intramural sports, gain valuable field experience related to career goals, and much else. Student Life coordinates many of these activities, and additional information is available at the Student Life website.

Personal Support

Resources to support students are available at every campus. To learn more, ask your professor or visit the campus Support Center. All resources and services are free and confidential. Some examples include, among others:

- Food resources including community pantries and bank drives can be found here at the Central Texas Food Bank website.
- Assistance with childcare or utility bills is available at any campus Support Center
- The Student Emergency Fund can help with unexpected expenses that may cause you to withdraw from one or more classes
- Help with budgeting for college and family life is available through the Student Money Management Office.
- A full listing of services for student parents is available at the Child Care website.

Mental health counseling services are available throughout the ACC Student Services District to address personal and or mental health concerns at the Counseling website.

If you are struggling with a mental health or personal crisis, call one of the following numbers to connect with resources for help. However, if you are afraid that you might hurt yourself or someone else, call 911 immediately.
Free Crisis Hotline Numbers:

- Austin / Travis County 24-hour Crisis & Suicide hotline: 512-472-HELP (4357)
- The Williamson County 24-hour Crisis hotline: 1-800-841-1255
- Bastrop County Family Crisis Center hotline: 1-888-311-7755
- Hays County 24 Hour Crisis Hotline: 1-877-466-0660

- National Suicide Prevention Lifeline: 988 or 1-800-273-TALK (8255)
- Crisis Text Line: Text “home” to 741741
- Substance Abuse and Mental Health Services Administration (SAMHSA) National Helpline: 1-800-662-HELP (4357)
- National Alliance on Mental Illness (NAMI) Helpline:1-800-950-NAMI (6264)

Some faculty may consider adding a student sign-off page at the end of the syllabus to be removed and handed back to the instructor providing evidence that the student received a copy of the syllabus and had an opportunity to ask questions, but such a page is optional.

Instructional Methodology: Using a combination of computer based instruction, lecture, and faculty demonstration, students will practice towards mastery of all required NATEF tasks

Course Rationale: Utilizing appropriate safety procedures, Demonstrate familiarity with historical development and career information on the automotive industry; demonstrate safe, professional, and responsible work practices; identify and demonstrate the proper use of shop equipment and tools; identify and describe functions of vehicle subsystems; demonstrate the use of service publications; identify various automotive fasteners used in industry; and perform automotive maintenance.

Common Course Objectives(student learning outcome): To prepare students for entry-level employment and certification through ASE.

CLASS AND LAB POLICIES:

1. Regular attendance is required. Only limited absences and tardies will be accepted if a grade better than a "D" is expected. *(1C-1,4, 2A-4)

2. Students are required to maintain a "C" average, or a grade point average of 2.00. This means that the average of all classes must be a "C" in order to obtain either a certificate of completion, or degree. Students who either arrive late for class, leave early, and/or bring no tools cannot expect to complete lab assignments in a timely manner and receive a grade better than "D". *(1A-1, 1C-1,2,4,5, 2A-4)

3. Students are expected to purchase their own tools. A list of the minimum type and number of tools are furnished at the beginning of each semester. Each student will have his/her own tools available for shop work at beginning of each class period. Loaning or borrowing of tools between students is discouraged. Specialty tools, tools not on the student tool list, are available from the Tool Room. The college will furnish tools for students who are enrolled in the Introduction to Automotive class. Failure to bring tools after the first month of enrollment in the Automotive Program subjects each student to disciplinary action up to and including dismissal from the program.*(1C-5, 2A-2)

4. Safety is always first. Common sense and our certifying agency, NATEF, require that all students wear safety glasses in the shop. Students without safety glasses will be prohibited from any shop activities. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at

http://www.austincc.edu/ehs *(1C-2,4,5)

5.Each student is strongly encouraged to participate in class. In any classroom situation that includes discussion and critical thinking, there are bound to be many differing viewpoints. These differences enhance the learning experience and create an atmosphere where students and instructors alike will be encouraged to think and learn. On sensitive and volatile topics, students may sometimes disagree not only with each other but also with the instructor. You are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

6. By applying to and registering at Austin Community College, students agree to abide by the Student Discipline Policy and Student Rights and Responsibilities regulations published in the ACC College Catalog and this Student Handbook. Acts prohibited by the college for which discipline may be administered include student profit associated with any lab project, scholastic dishonesty, including but not limited to cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, research or self expression. Academic work is defined as, but not limited to tests, quizzes, whether taken electronically or on paper, projects, either individual or group; classroom presentations, and homework. Prohibited acts include disruptive conduct of any kind. Disruptive conduct is defined as, but not limited to: Behavior that significantly interferes with or disrupts any ACC teaching, research, administrative, disciplinary, public service or other authorized activity. Behavior that threatens the health or safety of members of the ACC community, visitors to ACC, or participants at ACC-sponsored events, or willful negligence in the performance of lab projects. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at http://www.austincc.edu/current/needtoknow

7. Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed. Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations. **http://www.austincc.edu/support/osd/**

GRADING:

1. Lab activities will constitute 70% and tests will make up 30% of total grade. Homework assignments and pop quizzes will be given. A will not be given a passing grade,
"D", without 100 percent participation in pop quizzes and completion of assignments. *(1A-
4, 1C-1, 2A-4)

2. Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class. A positive constructive attitude, also plays an important part the overall evaluation of the
shop work and will be directly related to the shop grade. *(1C-1,2,4,5, 2A-4)

3. It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

4. Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course.
State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog. *(1C-1,4, 2A-4)

5. An instructor may award a grade of "I" (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

AUTOMOBILES FOR SHOP WORK:
Although cars are always needed for shop, whose car and which car is worked on first is not considered an important part of the course. All cars being worked on in the shop must first be approved by the instructor. Even though emergencies occur with cars breaking down, we are not here to schedule work as a garage would. Time schedules will not be considered or given as related to repair work of any given automobile. Only work related to the course will be considered. No work will be performed on a car if the subject has not first been covered in the classroom.

CARE AND CLEANING OF TOOLS,EQUIPMENT AND SHOP AREA (including class room).
All students will be expected to participate in shop and classroom cleanup at the end of each class period. Ample time will be allotted by the instructor for this purpose. All tools will be cleaned and put in the proper place before class will be dismissed. *(1A-4, 2B-1, 2A-2)

NATEF
The Board of the National Institute for Automotive Service Excellence (ASE) is the responsible body for the Automobile Technician Training Certification Program. The Certification Program is under the direct supervision of the Board of Trustees of the National Automotive Technicians Education Foundation (NATEF). The purpose of the Automobile Technician Training Certification Program is to improve the Quality of

training offered at the secondary and post-secondary levels. Austin Community College is currently certified in all automotive areas.

COURSE DESCRIPTION:
A course which offers 4 credit hours per semester. The instruction will be broken into two lecture hours and four hours per week. Concentrated study in an area of specialization, in which the student is seeking or has obtained employment. The student will furnish his own projects, in his field in which he needs to concentrate in. He will need to be able to diagnose and verify the problem or problems, by studying the symptoms. It is important for him to be able to interpret the symptoms. H e will then decide what adjustments or repairs are needed. When a system problem is difficult to pinpoint, he need to refer to detailed diagnosis chart in manufacturer's service manual. It will contain quoting information on that particular problem or problems. The student will diagnose and repair the problem with the minimum amount of supervision from the instructor.

COURSE OUTLINE:

1. Orientation
   A. Introduction to shop safety
   B. Proper use of hand tools and equipment for shop safety
   C. Personal Safety

2. Computerized Systems
   A. Theory computer networking
   B. Theory on input sensors
   C. Theory on output actuator
   D. Use of Diagnostic Equipment
      1. Scan tool
      2. Oscilloscope
      3. 4-Four gas analyzer
      4. Live scope

3. Computer-Controlled Ignition Systems
   A. Theory on computer control ignition systems
      1. Computer control distributor
      2. Computer control distributorless ignition systems (D.I.S.)
      3. (L.E.D.) optical distributors
   B. Theory Pulse Generator
      1. Hall-effect
      2. Optical

4. Fuel Injection systems
   A. Fuel deliver diagnosis and service
   B. T.B.I. Throttle body injection system
   C. M.P.I. Multi-part injection system
   D. C.P.I. Central ported injection system (vertex)

5. Computerized Braking Systems
   A. Theory

B. Types
C. Controllers
D. Sensors
E. Actuators

6. Computer Controlled Transmissions and Transaxles
   A. Theory
   B. Controls Common and Separate from Engine Management
   C. Sensors
   D. Actuators

7. Computer Controlled Air Conditioning Systems
   A. Theory
   B. Controls Common and Separate from Engine Management
   C. Sensors
   D. Actuators

8. Miscellaneous
   A. Instrument Panels
   B. Traction Controls
   C. Suspension Controls
   D. Integration/Networking

SCANS SKILLS AND OTHER NOTATIONS

Notated and identified * with activities throughout this syllabus are the generalized Scans Skills. A complete explanation of these headings are found in the GUIDELINES FOR INSTRUCTIONAL PROGRAMS IN WORKFORCE EDUCATION by the Texas Coordinating Board. The ASE TASKS are noted with either P1, P2, or P3 depending on NATEF priority. Numbers below each task are for student evaluation in the lab.

1. FOUNDATION SKILLS

A. BASIC SKILLS:
I. Reading
II. Writing
III. Arithmetic and Mathematical Operations
IV. Listening
V. Speaking

B. THINKING SKILLS:
I. Creative Thinking
II. Decision Making
III. Problem Solving
IV. Visualize
V. Reasoning

C. PERSONAL QUALITIES
I. Responsibility
II. Self-Esteem
III. Sociability
IV. Self-Management
V. Integrity and Honesty

2. WORKPLACE COMPETENCIES

A. RESOURCES:
I. Time
II. Money
III. Material and Facilities
IV. Human resources

B. INTERPERSONAL SKILLS:
I. Participate and Member of a Team
II. Teach Others New Skills
III. Serve Clients/Customers
IV. Exercise Leadership
V. Negotiate
VI. Work with Diversity

C. INFORMATION
I. Acquire and Evaluate Information

II. Organize and Maintain Information
III. Interpret and Communicate Information
IV. Use Computers to Process Information

D. SYSTEMS:
I. Understand Systems
II. Monitor and Correct Performance
III. Improve or Design Systems

E. TECHNOLOGY
I. Select Technology
II. Apply Technologies to Task
III. Maintain and Troubleshoot Equipment

NATEF TASK EVALUATION AND PRIORITIES

P-1 = must complete 95%
P-2 = must complete 80%
P-3 = must complete 50%

VI. ELECTRICAL/ELECTRONIC SYSTEMS

A. General Electrical System Diagnosis

1. Identify and interpret electrical/electronic system concern; determine necessary action. P-1

2. Research applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions, and technical service bulletins. P-1

3. Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, and calibration decals). P-1

4. Diagnose electrical/electronic integrity for series, parallel and series-parallel circuits using principles of electricity (Ohm's Law). P-1

5. Use wiring diagrams during diagnosis of electrical circuit problems. P-1

6. Demonstrate the proper use of a digital multimeter (DMM) during diagnosis of electrical circuit problems. P-1
7. Check electrical circuits with a test light; determine necessary action. P-2

8. Measure source voltage and perform voltage drop tests in electrical/electronic circuits using a voltmeter; determine necessary action. P-1

9. Measure current flow in electrical/electronic circuits and components using an ammeter; determine necessary action. P-1

10. Check continuity and measure resistance in electrical/electronic circuits and components using an ohmmeter; determine necessary action. P-1

11. Check electrical circuits using fused jumper wires; determine necessary action. P-2

12. Locate shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine necessary action. P-1

13. Measure and diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine necessary action. P-1

14. Inspect and test fusible links, circuit breakers, and fuses; determine necessary action. P-1

15. Inspect and test switches, connectors, relays, solid state devices, and wires of electrical/electronic circuits; perform necessary action. P-1

16. Repair wiring harnesses and connectors. P-1

17. Perform solder repair of electrical wiring. P-1

VI. ELECTRICAL/ELECTRONIC SYSTEMS

B. Battery Diagnosis and Service

1. Perform battery state-of-charge test; determine necessary action. P-1

2. Perform battery capacity test; confirm proper battery capacity for vehicle application; determine necessary action. P-1

3. Maintain or restore electronic memory functions. P-1

4. Inspect, clean, fill, and replace battery. P-2

5. Perform slow/fast battery charge. P-2

6. Inspect and clean battery cables, connectors, clamps, and hold-downs; repair or replace as needed. P-1

7. Start a vehicle using jumper cables and a battery or auxiliary power supply. P-1

VI. ELECTRICAL/ELECTRONIC SYSTEMS

C. Starting System Diagnosis and Repair

1. Perform starter current draw tests; determine necessary action. P-1

2. Perform starter circuit voltage drop tests; determine necessary action. P-1

3. Inspect and test starter relays and solenoids; determine necessary action. P-2

4. Remove and install starter in a vehicle. P-1

5. Inspect and test switches, connectors, and wires of starter control circuits; perform necessary action. P-2

6. Differentiate between electrical and engine mechanical problems that cause a slow-crank or no-crank condition. P-2

VI. ELECTRICAL/ELECTRONIC SYSTEMS

D. Charging System Diagnosis and Repair

1. Perform charging system output test; determine necessary action. P-1

2. Diagnose charging system for the cause of undercharge, no-charge, and overcharge conditions. P-1

3. Inspect, adjust, or replace generator (alternator) drive belts, pulleys, and tensioners; check pulley and belt alignment. P-2

4. Remove, inspect, and install generator (alternator). P-1

5. Perform charging circuit voltage drop tests; determine necessary action. P-1

VI. ELECTRICAL/ELECTRONIC SYSTEMS

E. Lighting Systems Diagnosis and Repair

1. Diagnose the cause of brighter than normal, intermittent, dim, or no light operation; determine necessary action. P-1

2. Inspect, replace, and aim headlights and bulbs. P-2

3. Inspect and diagnose incorrect turn signal or hazard light operation; perform necessary action P-2

VI. ELECTRICAL/ELECTRONIC SYSTEMS

F. Gauges, Warning Devices, and Driver Information Systems Diagnosis and Repair

1. Inspect and test gauges and gauge sending units for cause of intermittent, high, low, or no gauge readings; determine necessary action. P-1

2. Inspect and test connectors, wires, and printed circuit boards of gauge circuits; determine necessary action. P-3

3. Diagnose the cause of incorrect operation of warning devices and other driver

information systems; determine necessary action. P-1

4. Inspect and test sensors, connectors, and wires of electronic instrument circuits; determine necessary action. P-2

VI. ELECTRICAL/ELECTRONIC SYSTEMS

G. Horn and Wiper/Washer Diagnosis and Repair

1. Diagnose incorrect horn operation; perform necessary action. P-2

2. Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action. P-2

3. Diagnose incorrect washer operation; perform necessary action. P-2

VI. ELECTRICAL/ELECTRONIC SYSTEMS

H. Accessories Diagnosis and Repair

1. Diagnose incorrect operation of motor-driven accessory circuits; determine necessary action. P-2

2. Diagnose incorrect heated glass operation; determine necessary action. P-3

3. Diagnose incorrect electric lock operation; determine necessary action. P-2

4. Diagnose incorrect operation of cruise control systems; determine necessary action. P-3

5. Diagnose supplemental restraint system (SRS) concerns; determine necessary action. (Note: Follow manufacturer's safety procedures to prevent accidental deployment.) P-2

6. Disarm and enable the airbag system for vehicle service. P-1

7. Diagnose radio static and weak, intermittent, or no radio reception; determine necessary action. P-3

8. Remove and reinstall door panel. P-1

9. Diagnose body electronic system circuits using a scan tool; determine necessary action. P-2

10. Check for module communication errors using a scan tool. P-3

11. Diagnose the cause of false, intermittent, or no operation of anti-theft system. P-2