Central Academy of Technology and Arts Transportation Academy

Automotive Service Suspension/Chassis Electrical

Roger Pressley

**COURSE DESCRIPTION**

This course emphasizes steering and suspension and advanced electrical/electronics.

The electrical system will include, advanced inspection, troubleshooting, and repair of automotive electrical/electronic systems will be included in this course. The suspension section will include all aspects of the automotive steering and suspension systems. English language arts and mathematics are reinforced. Work-based learning strategies appropriate for this course include apprenticeship, cooperative education, entrepreneurship, internship, and job shadowing. This course helps prepare students for the Automotive Service Excellence (ASE) certification in electrical/electronics and suspension . SkillsUSA competitive events, community service, and leadership activities provide the opportunity to apply essential standards and workplace readiness skills through authentic experiences.

**OUTCOMES**

Upon satisfactory completion of this course, students will be able to:

* Concepts, applications and components of automotive electronics
* Measuring and interpreting analog and digital signals, pulse-width modulation, computer inputs and outputs
* Semiconductors: standard diodes, LEDs, and transistors
* Semiconductor circuitry: rectifiers, regulators, indicators, and control devices
* Automotive computer systems: memory and memory types, communications and Class II data
* System actuators: switched and pulse-width modulated controls
* Performance testing for inputs and outputs
* Input devices: switched, analog, and digital signals
* Test procedures
* Identifying the components and operating principles of different types of steering systems
* Diagnosing steering systems and determining needed repairs
* Identifying and replacing worn steering linkage components
* Diagnosing and repairing steering columns
* Identifying the components and operating principles of various types of front suspension systems
* Determining the condition of suspension system components
* Replacing worn suspension system components
* Identifying and replacing worn MacPherson strut suspension components
* Identifying the components and operating principles of various types of rear suspension systems; diagnosing and replacement
* Wheel alignment angles and correction, diagnosing wheel alignment problems

**Grading Polices**

Classroom Performance 30% (test, quizzes, and assignments)

Lab Performance 50% (hands –on-work including NATEF task list safe work performance)

Exam 20%

**Tutoring hours-**

8:00-8:45 Tuesday-Thursday

**Required Materials:**

Binder

Pencils/pen

Safety glasses

Suitable shop apparel

**Resources**

CDX online text book <http://lv2014.unionccc.cdxsite.com/>

Electude-ncunionhs.electude.com

**Make-up work rules /procedures**

Two days to turn in work do to absence

**Classroom Expectations**

Students are expected to adhere to all exiting CATA policies while attending the Automotive Training Programs and to contribute to a safe and productive learning environment. Any student’s actions place themselves or other students at risk or negatively impact the learning opportunities for others will face disciplinary actions and possible removal from the program.

All classes strive to prepare students for adult life by teaching skills and behaviors that will be valued in the work place.

The flowing expectations are stressed and graded in the class:

Attendance: Be here on time each day, prepared to work, dressed appropriately.

Respect: Use appropriate language, be honest, and truthful, and be respectful of peers and adults.

Responsibility: Complete work on time, follow directions, and use resources to answer questions, ask for help when needed, contribute to class discussions

Quality: Show determination to complete task, be consistent in quality, and focus on the task at hand.

Team: Work as a productive team member in a verity of roles, communicate in a sensitive way.

**Learning Platform at Central Academy**

Canvas: The majority of assignments will be submitted on our new "learning platform," Canvas. Assignments can be submitted a variety of ways including, uploading files, typing into text boxes, and sharing Google documents/presentations. Students not having used Canvas before should alert the teacher and they will be shown how to submit assignments on Canvas. Individual assignments will indicate which method of submission on Canvas is expected. If students need a refresher or have questions, they can access the Canvas Student Guide for specific instructions. It is the student's responsibility to ensure assignments are submitted on time and to contact the instructor if there is a problem. The Canvas Learning Platform logs every student log-in on Canvas which provides teachers with a list of when students log-in to Canvas using their user id.

Canvas is used to grade assignments as well, however, the grades in Canvas, while accurate to that assignment, are NOT the teacher’s gradebook. The teacher’s gradebook includes categories of assignments that may be weighted differently and may include grades for assignments that did not use the Canvas Learning Platform. Therefore, students and parents should always check their child’s true average on the Parent Portal on Powerschool.

**I can be contacted at:**

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