COURSE NUMBER & TITLE:  ASES 1023: Basic Electricity and Ignition Systems  
CREDITS:  4 (2 Lec / 2 Lab)  
PREREQUISITES:  None  

CATALOG DESCRIPTION:  
Basic Electricity and Ignition Systems covers the theory of electricity and its automotive application. This will include the basic electrical system, theory of operation, and troubleshooting. The ignition system, primary and secondary, will also be covered.

OUTLINE OF MAJOR CONTENT AREAS:  
1.  Basic electricity  
2.  Electronics introduction  
3.  Batteries  
   A.  Theory  
   B.  Service  
4.  Applied electricity  
5.  Four-cycle theory: mechanical testing  
6.  Ignition systems  
   A.  Basic circuitry  
   B.  Spark timing  
   C.  Electronic ignition  
   D.  System service  
7.  Engine testing  
   A.  Ignition scope  
   B.  Lab scope

COURSE GOALS/OBJECTIVES/OUTCOMES:  
1.  Students will perform solder repair of electrical wiring.  
2.  Students will perform battery state-of-charge test; determine necessary action.  
3.  Students will confirm proper battery capacity for vehicle application; perform battery capacity test; determine necessary action.  
4.  Students will maintain or restore electronic memory functions.  
5.  Students will inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.  
6.  Students will perform slow/fast battery charge according to manufacturer’s recommendations.  
7.  Students will remove and replace spark plugs; inspect secondary ignition components for wear and damage.

MNTC GOALS AND COMPETENCIES MET: N/A

HCC COMPETENCIES MET:  
Working Productively and Cooperatively  
Communicating Clearly and Effectively

STUDENT CONTRIBUTIONS:
A. Be present—if you’re not here you can’t get paid.
B. Participate—you will get out what you are willing to put in.
C. Work safe—it’s hard to fix cars if you cut off your fingers.
D. Take care of yourself—your body is your most valuable tool.
E. Keep your driver’s license—techs without good driving records don’t have jobs.
F. Think outside of the box—there is always a way.
G. Be a Professional—act like it, look like it, smell like it.
H. Communicate—nobody gets fired by asking for help

ADDITIONAL INFORMATION: -Handouts and other materials will be provided in class.
-Factory and aftermarket service manuals will be used for reference.
-Hazardous Waste Policy: proper handling practices will be used.
-Safety Eyeglass Policy: safety glasses will be worn at all time while working in the labs.
-Shop Safety Policy: safe shop working practices must be followed.

Violations of the above policies will be verbal or documented warnings and will be handled on a case-by-case basis.

METHODS FOR EVALUATING STUDENT LEARNING:
Student assessment shall take place using instruments selected/developed by the course instructor.

Curriculum Committee Approval Date: December 4, 2018

AASC APPROVAL DATE: December 19, 2018
REVIEW DATE: December 2023