HIBBING COMMUNITY COLLEGE
COURSE OUTLINE

COURSE NUMBER & TITLE: ASES 2027: Automotive Computers
CREDITS: 4 (1 Lec / 3 Lab)
PREREQUISITES: Instructor Approval

CATALOG DESCRIPTION:
Automotive Computers covers the operation and diagnosis of the engine control computer. The operation and diagnosis of the inputs and outputs used on domestic and import vehicles are stressed.

OUTLINE OF MAJOR CONTENT AREAS:
1. Computer logic: computer circuitry
2. Digital lab scope usage
3. Computer power feeds
4. Computer grounds
5. Computer inputs for domestic vehicles
   A. Theory
   B. Diagnosis
6. Computer outputs for domestic vehicles
   A. Theory
   B. Diagnosis
7. Scan tool usage
8. Basic scan data interpretation

COURSE GOALS/OBJECTIVES/OUTCOMES:
1. Students will access and use service information to perform systematic (troubleshooting) diagnosis.
2. Students will perform active tests of actuators using a scan tool and determine necessary action.
3. Students will inspect and test computerized engine control sensors, powertrain engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM)/digital oscilloscope (DSL), and determine necessary action.
4. Students will inspect and test crankshaft and camshaft position sensor(s), and perform necessary action.
5. Students will inspect and test fuel injectors.
6. Students will verify idle control operation.
MNTC GOALS AND COMPETENCIES MET:
N/A

HCC COMPETENCIES MET:
Working Productively & Cooperatively
Communicating Clearly & Effectively
Thinking Creatively & Critically

STUDENT CONTRIBUTIONS:
The student will:
1. Attend all lectures.
2. Participate in discussion.
3. Perform assigned tasks.
4. Follow safety rules.

Attendance is critical: if the student is not present, they cannot participate in or contribute to the learning process.

STUDENT ASSESSMENT SHALL TAKE PLACE USING INSTRUMENTS SELECTED/DEVELOPED BY THE COURSE INSTRUCTOR.

ADDITIONAL INFORMATION:
Tasks lists, handouts, and other materials will be provided.
Safety glasses are required in the lab.

Curriculum Committee Approval Date: April 3, 2018

AASC APPROVAL DATE: April 18, 2018
REVIEW DATE: April 2023