HIBBING COMMUNITY COLLEGE
COURSE OUTLINE

COURSE NUMBER & TITLE:  ASES 1014: Engine Diagnosis and Repair
CREDITS:  4  (1 Lec / 3 Lab)
PREREQUISITES:  None

CATALOG DESCRIPTION:
Engine Diagnosis and Repair covers basic engine theory and construction, part
identification, along with measuring and testing engine components. The reconditioning
of cylinders and other machine procedures are approached.

OUTLINE OF MAJOR CONTENT AREAS:
1. Engine classifications
2. Engine identification
3. Engine measurement and performance: evaluation of engine condition
4. Engine disassembly
5. Cylinder head and valve trains
6. Lubricating and cooling systems: cooling system service
7. Engine sealing and reassembly

COURSE GOALS/OBJECTIVES/OUTCOMES:
1. Students will inspect engine assembly for fuel, oil, coolant, and other leaks;
determine necessary action.
2. Students will remove cylinder head; inspect gasket condition; install cylinder head
and gasket; tighten according to manufacturer’s specifications and procedures.
3. Students will inspect, remove, and replace water pump.
4. Students will perform oil pressure tests; determine necessary action.
5. Students will diagnose abnormal engine noises or vibration concerns; determine
necessary action.
6. Students will perform cylinder cranking and running compression tests; determine
necessary action.
7. Students will perform cylinder leakage test; determine necessary action.
8. Students will verify correct camshaft timing.

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*