

COURSE OUTLINE

Revised By: B. Hughes July, 2007

DEPARTMENT:	Automotive Technology
CURRICULUM:	Automotive Technology
COURSE TITLE:	Automotive Engine Rebuild
COURSE NUMBER:	AUT 130
TYPE OF COURSE:	Vocational Preparatory
COURSE LENGTH:	Normally 6 weeks
CREDIT HOURS:	8
LECTURE HOURS:	30 hours
LAB HOURS:	120 hours
CLASS SIZE:	20 maximum
PREREQUISITES:	MVM 100 (Introduction to Automotive Technology I), MVM 102 (Introduction to Automotive Technology II), basic math skills, and 9 th grade or higher reading level (as evidenced by appropriate placement test scores), and/or instructor permission.

COURSE DESCRIPTION:

Contents include: engine disassembly, cleaning of engine parts, inspection and measuring of engine components, cylinder head rebuilding, overhauling engine blocks and reassembly of an automotive engine. In addition the function and construction of each component, as well as their diagnosis and service procedures will be covered. Instruction in safety, environmental awareness, human relations and leadership are taught as an integral part of this unit of study.

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Critical Thinking – Use problem solving skills to diagnose and repair automotive engine problems. (SLO 4.1)
2. Technology - Proper use and care of automotive engine repair tools and equipment. (SLO 5.1)

PROGRAM OUTCOMES:

1. Inspect, diagnose, disassemble, repair, replace and service each of the major systems in various types of vehicles. (SLO 4.1)
2. Locate sources, make parts write-ups, calculate costs and explain repair or service. (SLO 2.1, 2.2 & 7.1)
3. Handle customer needs, complaints, questions and special challenges. (SLO 3.1 & 3.2)
4. Access and apply manufacturer's specifications in repair and replacement. (SLO 7.1)
5. Work safely and responsibly within all shop safety and environmental guidelines and standards. (SLO 6.4 & 6.5)
6. Rebuild and troubleshoot transmissions. (SLO 4.1 & 5.1)
7. Demonstrate ability to pass the ASE test required for NATEF certification. (SLO 1.1, 1.2 & 7.1)
8. Communicate and document service records. (SLO 2.1)
9. Compute costs, time and measurements. (SLO 2.1, 2.2 & 7.1)
10. Work independently and in groups to service, repair, test and maintain vehicles. (SLO 3.1 & 6.3)
11. Use technology to test vehicles. (SLO 5.1)
12. Work with accuracy, dependability, proficiency and in a timely manner, when servicing equipment. (SLO 6.3 & 6.4)

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Explain and demonstrate safety as it applies to the automotive industry.
2. Demonstrate how to use both measuring and special engine tools.
3. Demonstrate how to disassemble an automotive engine.
4. Demonstrate how to rebuild cylinder heads.
5. Demonstrate how to rebuild an engine block.
6. Demonstrate how to reassemble an automotive engine.
7. Demonstrate proficiency in NATEF competencies.

TOPICAL OUTLINE:

APPROX. HOURS

I.	Safety practices	15
II.	Engine disassembly	10
III.	Cleaning engine parts	10
IV.	Inspect and measure engine components	15
V.	Overhaul cylinder heads	40
VI.	Overhaul engine blocks	40
VII.	Engine reassemble	<u>20</u>
	Total	150