

COURSE OUTLINE

Revised By: B. Hughes July, 2007

DEPARTMENT:	Automotive Technology
CURRICULUM:	General Service Technician Program
COURSE TITLE:	Basic Brake Systems
COURSE NUMBER:	AUT 126
TYPE OF COURSE:	Vocational Preparatory
COURSE LENGTH:	Normally 2 weeks
CREDIT HOURS:	3
LECTURE HOURS:	10 hours
LAB HOURS:	40 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 evidence by appropriate placement test scores), and/or instructor permission.

COURSE DESCRIPTION:

Contents include: brake theory, diagnosing brake problems, master cylinders, wheel cylinders, hydraulic valves, brake hoses, brake lines, brake shoes, brake drums, parking brakes as well as removal and installation of brakes from vehicles. In addition the function and construction of each component, and 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.

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Critical Thinking – Use problem solving skills to diagnose and repair automotive brake problems. (SLO 4.1)
2. Technology - Proper use and care of automotive brake 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. Demonstrate ability to pass the ASE test required for NATEF certification. (SLO 1.1, 1.2 & 7.1)
7. Communicate and document service records. (SLO 2.1)
8. Compute costs, time and measurements. (SLO 2.1, 2.2 & 7.1)
9. Work independently and in groups to service, repair, test and maintain vehicles. (SLO 3.1 & 6.3)
10. Use technology to test vehicles. (SLO 5.1)
11. 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. Explain, identify, and service different kinds of hydraulic systems found on automobiles and light trucks.
3. Explain, identify, and service different kinds of drum brakes found on automobiles and light trucks.
4. Explain, identify, and service different kinds of parking brakes found on automobiles and light trucks.
5. Demonstrate proficiency in NATEF competencies.

TOPICAL OUTLINE:

APPROX. HOURS

I. Brake system principles, components and operation	10
II. Master cylinder and hydraulic system diagnosis and service	15
III. Drum brake operation, diagnosis and service	10
IV. Machining brake drums and rotors	10
V. Parking brake operation, diagnosis and service	<u>5</u>
Total	50

REVISED BY: Brian Hughes

DATE: July 29, 2007