BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

AUT 2 - Honda Express Service **2 Unit(s)**

Prerequisite(s): NONE
Recommended Prep: Reading Level III; English Level II; Math Level I
Transfer Status: CSU
17 hours Lecture
51 hours Lab

This course teaches students the maintenance procedures used in Honda Express Service. Students will learn basic automotive shop safety, tool and equipment use, and the steps to research vehicle service information. Pass/No Pass Only.

II. **OBJECTIVES**

Upon successful completion of this course, the student will be able to:

A. Safely perform a Solo A2 Express Service with efficiency and 100% accuracy.
B. Safely perform a Tech A/B B1 Express Service with efficiency and 100% accuracy.
C. Analyze and describe the resources available to properly perform an Express Service inspection and service.
D. Compare and contrast the types of braking systems used on today's vehicles and how they operate.
E. Identify and describe the operation of the vehicle horn, parking brake, and interior and exterior lights.
F. Identify construction and function of automotive batteries and the inspection process of battery exterior and cables for signs of damage.
G. Describe the cooling system and coolant hose functions.
H. Describe the procedure for filling the engine with oil and determining the correct oil level.
I. Describe tire construction and function and identify the wear characteristics due to improper inflation and incorrect alignment.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lecture

Topics	Hours
1. Introduction to Express Service • Career opportunities • Honda's philosophy • introduction to shop policies • introduction to personal safety • Prepare for SP2 safety certification	1.00
2. Identifying vehicles and their controls • Deciphering vehicle identification numbers • Understanding interior lighting controls • Identify warning lights and their relationship	1.00

3. Identifying Express hand tools 1.00
    - Proper use of the different oil filter wrenches
    - Ratchets, sockets and wrenches
    - Battery testers
    - Torque wrenches and torque sticks
    - Tire measuring tools
4. Torque Procedures 1.00
    - Understanding Torque—What it is and why it is Important
    - Torque Wrenches—Click-type, Beam-type, and Dial-type
    - Insuring Accurate Readings
    - Torque Sticks
    - Preset Torque Wrenches
5. Hydraulic Lift Operation 1.00
    - Express Service Lifts and Controls
    - Positioning of Vehicle
    - Raising and Lowering the Vehicles
    - Surface Mounted and In-ground Lifts
    - Non-Express Service Hydraulic Lifts
6. Initial Checks 1.00
    - Horn
    - Parking Brake
    - Lights—Exterior and Interior
    - Wiper Blade Function and Wear
    - Wiper Blade Replacement and Nozzle Check
7. Battery Inspection and Testing 1.00
    - Battery Functions and Construction
    - Battery Safety—Connections, Jump-starting, Charging, Replacing
    - Inspecting the Battery
    - Battery Clean-up
    - Checking Charge Indicators
    - Checking Electrolyte Levels
    - Refilling Battery Fluid
    - Battery Testing
8. Steering and Suspension Inspection 1.00
    - Identify and inspect car springs
    - Testing shock absorbers
    - Inspecting suspension arms, connecting hardware and rubber bushings
9. Under Vehicle Inspection 1.00
    - Inspection of exhaust system components including muffler, exhaust Pipes, resonator, catalytic converter and oxygen sensors
    - Inspect Fluid Lines including gas, brake, coolant, power steering and air conditioning
    - Inspect for leaks from drive train, including engine, transmission and differentials
10. Clutch Operation and Inspection 1.00
    - Clutch Function
    - Clutch components
    - Hydraulic Clutch Release
    - Mechanical Clutch Release
    - Clutch Inspection Procedure
    - Clutch Pedal Height and Free Play Inspection

11. Braking System Inspection 1.00
- Hydraulic Braking system Overview
- Braking System Components—Disc and Drum Brakes
- Braking System Inspection—Fluid level, Brake Pad or Lining Thickness
- Disc Brake or Drum Brake Measurement

12. Tire Inspection 1.00
- Tire Construction and Function—Radial Tires, Tire Traction
- Tire Inspection—Wear Damage
- Tire Inflation—Under Inflation, Over Inflation
- Tire Tread Depth Measurement and Treadware Indicators
- Tire Rotation

13. Drive Belt and Cooling System Hose Inspection 1.00
- Drive Belt Function
- Drive Belt Inspection—Tension, Damage
- Cooling System Components and Function
- Cooling System Hose Inspection and Damage

14. Fluid Level Checks 2.00
- Vehicle Fluids Overview—Fluids, Reservoirs, Fluid Checks Engine
- Coolant—Purpose and Function, Locate and Identify, Check Fluid
- Level, Add Coolant, Identify Leaks.
- Brake Fluid— Purpose and Function, Locate and Identify, Check
- Fluid Level, Add fluid, Identify Leaks.
- Clutch Master Cylinder Fluid—Purpose and Function, Locate and
- Identify, Check Fluid Level, Add fluid, Identify Leaks.
- Power Steering Fluid—Purpose and Function, Locate and Identify,
- Check Fluid Level, Add fluid, Identify Leaks.
- Automatic Transmission Fluid— Purpose and Function, Locate and
- Identify, Check Fluid Level, Add fluid, Identify Leaks.
- Windshield Washer fluid— Purpose and Function, Locate and
- Identify, Check Fluid Level, Add fluid, Identify Leaks.

15. Oil and Oil Filter Replacement 1.00
- Oil Grades and Viscosity
- Oil Viscosity Recommendations and Oil Change Interval
- Replacing the Oil, Oil Filter and Checking Oil Levels
- Drain Bolt and Oil Removal
- Drain Bolt Inspection
- Oil Filter Removal and Filter Selection and Installation
- Maintenance Indicator Light
- Rechecking Oil Level

16. Express Service Choreography 1.00
- Choreography overview
- Express Service
- Express Service Resources
- Minor Express Service—Solo Technician
- Major Express Service—Two Technian

Total Hours 17.00

Lab

Topics	Hours

1.	Vehicle identification numbers	1.00
2.	Understanding vehicle controls	2.00
3.	Identifying express service hand tools	1.00
4.	Torque wrenches and procedures	2.00
5.	Hydraulic lift operation	1.00
6.	Initial checks	1.00
7.	Horn, interior lights, wiper and washer inspection	2.00
8.	Battery inspection, testing and service	3.00
9.	Vehicle steering and suspension inspection	2.00
10.	Clutch inspection	2.00
11.	Brake inspection	6.00
12.	Exhaust inspection	1.00
13.	Tire inspection and maintenance	3.00
14.	Drive belt and cooling system inspection	3.00
15.	Fluid level and condition inspection	1.00
16.	Oil and filter change	3.00
17.	Drive train fluid change	3.00
18.	Driving skills	3.00
19.	Express Choreography	11.00
Total Hours		51.00

IV. **METHODS OF INSTRUCTION**

A. Lecture
B. Collaborative Group Work
C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
D. Demonstrations
E. Reading Assignments
F. Hands-on (real world) timed service performance session.
G. Collaborative evaluation of other student "Express Service" teams.

V. **METHODS OF EVALUATION**

A. Exams/Tests
B. Oral Presentation
C. Lab Projects
D. Final Examination
E. Class Discussion
F. Visual evaluation by the instructor.
G. Team competition based on time and quality of lab performance.

VI. **EXAMPLES OF ASSIGNMENTS**

A. Reading Assignments
    1. Research vehicle service specifications for a 2011 Honda Crosstour and apply the specifications during hands on lab practice.
    2. Research and follow procedural information for proper servicing during a Solo technician Type "A" service and use these procedures during the hands on lab.
B. Writing Assignments

1. Fill in the proper information regarding the brake inspection into the multi-point inspection form for customer review.
2. Fill in required information in the brake lab work sheets including factory minimum and maximum specifications and the final measurements of the vehicles brake system.

C. Out-of-Class Assignments

1. Complete the interactive cognitive self-study module related to tire identification, inspection, inflation, and rotation in the Honda Online University.
2. Complete the interactive cognitive self-study module related to proper battery testing and inspection in the Honda Online University.

VII. RECOMMENDED MATERIALS OF INSTRUCTION

Materials Other Than Textbooks:

A. Online training materials provided by Honda Motor Corporation through Honda Online University.

B. Lab book provided by instructor.

Created/Revised by: Doug Conrad
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