Las Positas College
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Course Outline for AUTO 66

AUTO STEERING/SUSPENSION SYS

Effective: Fall 1993

I. CATALOG DESCRIPTION:
AUTO 66 — AUTO STEERING/SUSPENSION SYS — 3.00 units

Diagnosis, evaluation, testing, adjustment, and repair of steering and suspension systems. Including all common automotive steering and suspension systems both car and truck. Future systems will also be covered. Students are strongly recommended to enroll in Automotive Lab concurrently. Prerequisite: Automotive Technology 55 (completed with a grade of "C" or higher).

2.00 Units Lecture 1.00 Units Lab

Prerequisite
AUTO INTR - Automotive Service and Introduction
with a minimum grade of C

Strongly Recommended
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Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	36.00
Lab Hours:	54.00
Total Hours:	90.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 4

III. PREREQUISITE AND/OR ADVISORY SKILLS:
Before entering the course a student should be able to:

A. AUTOINTR

IV. MEASURABLE OBJECTIVES:
Upon completion of this course, the student should be able to:

A. . understand and apply Hazardous waste handling;
B. identify and describe uses of automotive related tools;
C. describe the importance of preventative maintenance and inspection procedures as they relate to the automobile;
D. understand four stroke engine cycle and identify engine parts;
E. perform basic engine teardown and reassembly;
F. apply Ohms law, read basic schematics, test automotive electrical systems;
G. identify emissions components, understand 5 gas theory;
H. understand heating and cooling systems, perform basic cooling systems tests;
I. identify air conditioning systems, understand cycles of refrigerant;
J. understand braking systems, perform a brake inspection, identify parts;
K. differentiate between suspension and steering system types, inspect and qualify components;
L. identify different transmissions, understand theory of operation of both manual and automatic transmissions and fluid requirements;
M. restraints system identification, know safety concerns of each system and inspection of restraint systems;
N. theorize on the future of the automotive industry.

V. CONTENT:
A. Fundamentals and theory of automotive steering and suspension systems
    1. System geometry and alignment specifications
    2. Fundamental principals of electrical flow, and component operation
B. Applied principal competencies
    1. Perform alignment
    2. Diagnosis vibration, electrical, and mechanical concerns

C. Electronic components
    1. Identify and list functionality of electronic components
    2. Test and verify functionality of components
    3. Demonstrate use of a scanner, and volt/ohm testers
D. Alignments
    1. Perform two wheel alignments
    2. Perform four-wheel alignments
    3. Conduct toe only adjustments
    4. Check cradle adjustments
E. Tire and wheel problems
    1. Check radial and lateral variations on both tires and wheels
    2. Make bearing pre-load adjustments
    3. Perform vibration correction tests to isolate customer concerns
F. Vibration concerns
    1. Perform vibration correction tests
    2. Isolate vibrations
    3. Identify type, frequency, and order of vibrations
G. McPherson strut and "A" –Arm type suspension systems
    1. Identify types of suspensions
    2. Perform adjustments pertaining to type of system
    3. Describe safety precautions and warning
    4. List benefits for each type system
H. Professional environment
    1. Safety glasses (Clear lens) worn in all Laboratory areas
    2. No loose clothing (Coveralls strongly recommended)
    3. Long Hair secured
    4. No open toe shoes (safety shoes recommended)
    5. Work areas maintained; clean free of debris and spills

VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Lab** - Student hands-on laboratory activities and assignments
C. **Audio-visual Activity** - PowerPoint presentations, Mockup parts from automobiles
D. **Discussion** - Group discussion

VII. TYPICAL ASSIGNMENTS:

VIII. EVALUATION:
A. **Methods**

1. Class Participation
2. Home Work
3. Lab Activities

B. **Frequency**

IX. TYPICAL TEXTS:
1. Knowles, Don *Automotive Suspension & Steering Systems.* 3rd Ed., ed., Delmar Publishing, 2003.
2. Safety Glasses

X. OTHER MATERIALS REQUIRED OF STUDENTS: