

# Lassen Community College Course Outline

## AT-151 Automotive Chassis System

0.0 Units

### I. Catalog Description

This course was designed to introduce shop procedure and safety to the student. Students will acquire the skills necessary to perform vehicle brake overhaul procedures and suspension alignment. Visual inspection procedures for brake, steering, and suspension systems will also be covered. This course is design to provide entry level skills for employment. The course has been approved for Hybrid delivery.

**Recommended Preparation:** English 105 or equivalent placement through the assessment process.

Does not transfer to UC/CSU

17 Hours Lecture, 34 Hours Lab, 51 total student learning hours

Scheduled: Fall, spring, summer

### II. Coding Information

Repeatability: Not repeatable

Grading Option: P/NP (non-credit)

Credit Type: Noncredit (Not Community Service)

TOP Code: 094800

### III. Course Objectives

#### A. Course Student Learning Outcomes

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

1. Identify vehicle information and perform brake, steering, and suspension systems inspections at a beginner level.
2. Students will also be able to perform brake system overhauls at a beginner level.
3. Students will also be able to measure and adjust suspension alignment angles.

### IV. Course Content

#### A. Shop safety

1. Shop safety procedures and routines
2. Shop equipment usage
3. Personal protection equipment
4. Fire safety

#### B. Tools

Tool identification

#### C. Data Acquisition

1. Vehicle identification
2. Repair manual usage
3. Mitchell/All Data usage

#### D. Brake Systems

1. Theory of operation
2. Disc brake components
3. Disc brake overhaul and rotor machining
4. Drum brake components
5. Drum brake overhaul and drum machining

#### E. Steering and Suspension Systems

1. Theory of operation
  2. Steering linkage inspection
  3. Suspension system inspection
  4. Alignment theory and measurement
  5. Alignment adjustments
- F. Tires
1. Tire inspection and wear pattern analysis
  2. Tires mounting and balance

## **V. Assignments**

### **A. Appropriate Readings**

1. Industry materials as furnished by the instructor
2. Trade magazines
3. Manufacturer's bulletins
4. Current professional manuals

### **B. Writing Assignments**

Typical writing assignments will include:

1. Providing written answers to assigned questions
2. Performing mathematical calculations as assigned
3. Maintaining a notebook of class assignments/activities

### **C. Expected Outside Assignments**

Appropriate outside assignments may include:

1. Researching appropriate readings
2. Preparing written assignments and completing homework as assigned.
3. Studying as needed for successful classroom performance

### **D. Specific Assignments that Demonstrate Critical Thinking**

Students will perform analysis and evaluation of readings and/or classroom materials and utilize this analysis in classroom discussion, writing assignments, and in performing laboratory activities. Students must select and use appropriate methods and materials needed to complete laboratory assignments.

Assignments in hybrid delivery may include completion of similar assignments online, discussion groups, email responses, and completion of lab packs online or in class.

## **VI. Methods of Evaluation**

### **Traditional classroom delivery:**

Term paper (topic choice, thesis statement, outline, bibliography, rough draft, final draft), homework, classroom discussion, essay, journals, lab demonstrations and activities, multiple choice quizzes, and participation.

### **Hybrid delivery:**

All quizzes and exams will be administered during the in person class time. Students will be expected to complete online assignments and activities equivalent to in class assignments and activities for the online portion of the course. Electronic communication, both synchronous and asynchronous (chat/forum) will be evaluated for participation and to maintain effective communication between instructor and students.

## **VII. Methods of Delivery**

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

Traditional Classroom Delivery     Correspondence Delivery

Hybrid Delivery     Online Delivery

**Traditional classroom delivery:**

The appropriate method of instruction will be determined by the instructor and may include:

1. Lecture with or without various audio/visual aids.
2. Group problem solving, discussion, debate, and/or critique.
3. Demonstration
4. Computer-assisted/other self-paced instruction.
5. Field trips or field assignments.
6. Laboratory assignments utilizing planned activities or "live" work.

**Hybrid delivery:**

Hybrid modality may involve face to face instruction mixed with online instruction. A minimum of 1/3 of instruction, including 100% labs, will be provided face to face. The remaining hours will be taught online through a technology platform as adopted by the district.

**VIII. Representative Texts and Supplies**

Halderman & Deeter. *Introduction to Automotive Service*, 1<sup>st</sup> Edition, 2013, Pearson, ISBN: 9780133005332 or eText ISBN: 9780133058611

Industry materials as furnished by the instructor

Current professional manuals

Most current publication/edition will be used for all manuals.

Student should have **Appropriate Shop Clothing**

**IX. Discipline/s Assignment**

Automotive Technology

**X. Course Status**

Current Status: Pending

Original Approval Date: 09/19/2017

Board Approved: 10/10/2017

Chancellor's Office Approval: 03/09/2018

Revised By: Chad Lewis

Curriculum/Academic Standards Committee Revision Date: 11/7/2023