

**DE ANZA COLLEGE  
AUTOMOTIVE TECHNOLOGY  
A.T. 93A - AUTOMOTIVE FINAL DRIVE TRAIN  
GREEN SHEET**

AUTOMOTIVE TECHNOLOGY 93A/B

I. Catalog Information

AUTO 93A	Automotive Final Drive Train	5 Units
AUTO 93B	Standard Transaxles	1 1/2 units

Prerequisites: Approved Automotive Technology Course  
sequence contract.

Advisory: Math 101, Read 91 and Ewrit 100B or ESL4 or  
LART 100

Ten hours lecture-laboratory per quarter

One hundred twenty hours lecture-laboratory per  
quarter

Components of the final drive train including design  
feature and service techniques.

II. Course Objectives

The student will:

- A. Identify and describe the operation of the major components in the automotive and light duty truck final drive train.
- B. Service each of the components in the automotive and light duty truck final drive train.
- C. Teardown, repair and reassemble each of the major components in the automotive and light duty truck final drive train.
- D. Diagnose problems in each of the major components in the automotive and light duty truck final drive train.

### III. Essential student materials

- A. Safety glasses
- B. Approved coveralls and work shoes
- C. Basic hand tools and required specialty tools as stated on the Automotive Technology General, Chassis and Powertrain tool lists.

### IV. Essential College Facilities

Lecture classroom and automotive laboratory

### V. Expanded Description Content and Form

- A. Propeller Shafts and Drive Axles
  - 1. Theory
  - 2. Service techniques
  - 3. Disassembly, inspection and repair
- B. Clutches, Standard Transmissions and Rear Axles
  - 1. Theory
  - 2. Service techniques
  - 3. Disassembly, inspection and repair
- C. Advanced Final Drive Train Activity
  - 1. Individual student/instructor discussions regarding selected laboratory activities.
  - 2. Disassembly, inspection and repair

### VI. Assignments

Reading assignments from textbooks and handouts.  
Completion of required laboratory activities.

### VII. Methods of Evaluating Objectives

- A. Satisfactory completion work orders (5 Pts ea)  
*An RO should be done for each task. You will be given credit for the best 10 RO's turned in. The RO must be turned in within 1 class day of completion of the task. No credit will be given for late RO's. RO's for work completed on Friday are due 7:30 the following Monday.*

- B. Objective and written quizzes (20 Pts ea.)

- C. Lab Activity sheets. Lab sheets must be turned in within 1 class day upon completion of activity.  
(5-10 pts ea.)

- D. Midterm examination (100 Pts)
- E. Final examination (200 Pts)
- F. Laboratory performance examination (200 Pts)
- G. Attendance  
See "X" below

#### VIII. Texts and Supporting References

##### Texts:

- A. MANUAL DRIVETRAINS AND AXLES by Tom Birch 6th ed.  
ISBN# 978-0-13-512362-1

##### References:

Manufacturers service manuals as required

#### IX. Other Related Information

1. Instructor: Rick Maynard
2. Office: E14c
3. Office hour: 12:30 - 1:20 and by appointment
4. Telephone: (408) 864-8704 Office
5. e-mail: maynardrick@fhda.edu
6. Grading standards:
  - A = 90-100% of points
  - B = 80-89% of points
  - C = 70-79% of points
  - D = 60-69% of points

#### X. Attendance

Just as on the job, regular, punctual attendance is required. Always call in if you are going to be absent. The following limits and conditions apply per department policy:

- A. Students must record attendance on a time card.  
Punch in prior to 7.30AM (start of class) and out not before 12:10 (end of class). If you are late to class, bring your time card for me see.

- B. For each tardy, there is a 1-hour penalty. 7:30AM is tardy.
- C. Forgetting to punch in or out will constitute a 1-hour penalty.
- D. Up to 5 hours (each 6 weeks) can be made up **providing the student calls in.** Missed time cannot be made up if the student does not call in prior to class. Hours not made up will be deducted from total class points at the rate of 1% per hour. **The instructor will specify terms and conditions for make-up. Just because you need to make up time does not mean I am obligated to provide you the time to do it.**
- E. Hours must be made up prior to finals week.
- F. Incomplete grades may be given in instances of long-term illness or injury.
- G. To drop without penalty, a drop form must be filed by the date specified in the schedule of classes.
- H. You may NOT bank hours ahead of time for tardies.

#### XI. Classroom and Lab Conduct

- A. Students will be dismissed and dropped from class with a failing grade for disruptive behavior per college policy.
- B. Wear safety glasses, coveralls, and work shoes for the duration of labs.
- C. All required tools must remain available for lab activities; basic hand tools cannot be checked from the tool room after the first 6 weeks. Spot checks of tools will be made at random.
- D. Students are to remain in assigned areas through cleanup. Punch out on time cards only after cleanup.
- E. There is one 20-minute break between lecture and lab. The instructor will check roll at start of lab. Do not leave campus on break.
- F. It is expected that work will be completed with pride and craftsmanship and that students will perform warranty services if necessary. If overtime is required, consider it the equivalent of homework.
- G. All lab work must be entered on a repair order, estimated, authorized by the customer and initialed by the instructor.

H. Your cell phone and/or electronic communication device must be turned off. If you get or send a message during class, your device will be confiscated until the end of class.

## XII. Security

It is understood that the facility and all within is exposed. It is therefore necessary that each and every student assume responsibility for their own security and that of other students and the department. To this end, observe the following guidelines:

1. Lock your own toolboxes and store them in locked areas.
2. Watch out for fellow students' tools and secure them as well if necessary.
3. Do not allow strangers to roam lab areas. Ask questions and secure unattended lab areas.
4. If you unlock a door or cabinet outside of class time, lock it when done.
5. Do not enter the tool room unless accompanied by your instructor.

## XIII. Parking

Parking permits for use in designated areas are available in the Administration Building. Do not park in any shop space. These are reserved for shop activities. Cars parked improperly are subject to citation or will be moved.

## XIV. Fees

Although periodic adjustments may be necessary, fees and/or deposits are be charged as follows:

- A. \$20.00 deposit on tool checks for the academic year
- B. \$5.00 lab fee added to each Repair Order to cover miscellaneous materials used for repairs
- C. \$5.00 added to each Repair Order to cover haz-mat related expenses

XV. Calendar

Start of class- 18 Feb

Quizzes- each Friday

Mid-term Exam- 4 March

Performance finals- 22-25 Mar

Written Final-21 March

Spring Break (whoo-hoo) 29 Mar-4 Apr

Start of Spring Quarter (boo-hoo)- 6 April