

**JEFFERSON COLLEGE**  
**COURSE SYLLABUS**

**AUT232**  
**DRIVELINE DIAGNOSIS AND SERVICE LAB**  
3 Credit Hours

Prepared by: Gary Boyher  
Date: February 10, 2014

Revised by: Brad Berrey  
Date: September, 26 2016

Chris DeGeare, M.Ed., Division Chair, Business and Technical Education  
Dena McCaffrey, Ed.D., Dean, Career & Technical Education

## AUT232 DRIVELINE DIAGNOSIS AND SERVICE LAB

### I. CATALOGUE DESCRIPTION

- A. Prerequisite: AUT211 Advanced Engine Performance with a Grade of “C” or Better  
AUT212 Advanced Engine Performance Lab with a Grade of “C” or Better  
Reading Proficiency  
Co-requisite: AUT231 Driveline Diagnosis and Service
- B. 3 Credit Hours
- C. This course covers the actual diagnosis, service and repair of driveshafts, CV axles, and differentials. This course also covers in car service of manual and automatic transmissions. Transmission removal and installation as well as clutch service will be covered. Completion of this course will prepare the student for employment in the automotive field and take the National Institute for Automotive Service Excellence (ASE) Automatic Transmission/Transaxle (A2) and Manual Drive Train & Axles (A3). (S)

### II. EXPECTED LEARNING OUTCOMES/ASSESSMENT MEASURES

Demonstrate an understanding of the theory/operation of driveshaft's and CV axles	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of a differential	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of the clutch assembly	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of clutch diagnosis	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of the theory and operation of manual transmissions	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback

Demonstrate an understanding of the internal components of a manual transmission and transaxle	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of a 4WD system	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of the internal components of a 4WD system	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate a understanding of a torque converter and its internal components	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of the function of automatic transmissions	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback
Demonstrate an understanding of the internal components of an automatic transmission and transaxle	Performance of Task During Lab/Shop Class with 100% Accuracy Lab Exercises Instructor Observation/Feedback

### III. OUTLINE OF TOPICS

- A. Driveshafts
  1. Remove a driveshaft from a vehicle
  2. Remove and install a “U” joint
  
- B. CV Axles
  1. Diagnose a CV axle
  2. Remove and replace a CV axle
  3. Test for proper operation
  
- C. Manual Transmissions
  1. Diagnose a manual transmission
  2. Adjust manual transmission linkage
  3. Remove and reinstall a manual transmission
  4. Test for proper operation

- D. Clutches
  - 1. Diagnose a clutch
  - 2. Adjust different types of clutch linkages
  - 3. Remove and reinstall a clutch assembly
  
- E. Automatic Transmissions
  - 1. Diagnose an automatic transmission
  - 2. Perform adjustments on an automatic transmission
  - 3. Remove and reinstall an automatic transmission

IV. METHOD(S) OF INSTRUCTION

- A. Lab Exercises
  
- B. Live Vehicle Repair

V. REQUIRED TEXTBOOK(S)

James D. Halderman, *Automatic Transmissions and Transaxles* (Current Edition), Pearson  
James D. Halderman, *Manual Drivetrains and Axles* (Current Edition), Pearson

VI. REQUIRED MATERIALS

- A. Jefferson College Automotive Technology or Approved Sponsoring Shop Workshirt
  
- B. Safety Glasses
  
- C. Work Boots

VII. SUPPLEMENTAL REFERENCES

None

VIII. METHODS OF EVALUATION

- A. Student Participation 40%
  
- B. Shop Work 60%

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Technology Center 101; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College Website <http://www.jeffco.edu>).

XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.

XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.