

# AT 180 - MANUAL DRIVETRAIN AND AXLES

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## Course Description

This course covers the basic operating principles, construction, power flow and repair of clutches, manual transaxles, and drive shafts. Differential theory and overhaul will be covered including ring and pinion replacement and set up. Group 2 course.

## Credit Hours

6

## Contact Hours

9

## Lecture Hours

3

## Lab Hours

6

## Required Prerequisites

AT 100-may be taken concurrently

## General Education Outcomes supported by this course

Critical Thinking - Direct

## Course Learning Outcomes

### Knowledge:

- Describe operation and design of manual transmissions and drivelines using current automotive system nomenclature.

### Application:

- Identify issues or problems with various manual transmissions and drivelines and articulate (demonstrate) a process for resolving those to given specifications.

### Integration:

- Apply problem solving strategies to resolve issues with automotive transmission and drivelines systems.

### Human Dimension:

- Discuss course information with others regarding engine performance.

### Caring - Civic Learning:

- Service a vehicle owned by a customer using recommended shop procedures.

### Learning How to Learn:

- Demonstrate mastery of written material and bench work on manual transmissions and drivelines as tested by the State of Michigan.