

Student Name _____ Instructor Name _____

High School or Vocational Center _____ Grade _____

**COMPETENCY CHECKLIST FOR ADVANCED TECHNICAL PLACEMENT
Automotive Technology**

**AT 210
Power Trains (Manual Drive-trains)
3 Credit Hours**

This course gives the student experience in theory, diagnosis and repair of automotive drive trains. It includes study of clutches, drive shafts, universal joints, differentials, axles, and manual FWD & RWD transmissions.

To meet the standards for articulated credit, the student will demonstrate competency in tasks listed below. Competency standards will be determined by the high school instructor.

Task	Satisfactory	Unsatisfactory
DEMONSTRATE AN UNDERSTANDING		
<i>The student will be able to:</i>		
Demonstrate an understanding of rear axle operation both conventional and limited slip		
Demonstrate an understanding of drive shaft operation including phasing, CV joints, and working angles		
DEMONSTRATE PROFICIENCY IN SERVICE		
<i>The student, by using instructor instruction, shop manuals, and appropriate shop safety practices will be able to:</i>		
Diagnose drive line problems		
Diagnose and performance test manual transmission problems		
Inspect drive shafts, universal joints and center bearings		
Lubricate universal joints		
Remove and replace transmission mounts (FWD and RWD)		
Remove and replace transmissions (FW and RW)		
Adjust shift linkage		
Adjust clutches		
Remove and replace extension housing seals and bushings		

Task	Satisfactory	Unsatisfactory
Remove and replace clutches, release bearings, linkage and pilot bearings		
Rebuild or replace clutch master and slave cylinders		
Remove and replace universal joints		
Remove and replace speedometer gears and service speedometer cables		
Remove and replace drive axle bearings and seals		
Service and repair differentials		
Remove and replace trans-axle assemblies		
Adjust trans-axle shifting controls		
Inspect, remove and replace constant-velocity universal joints		
Service manual transmissions to include overdrives		
Overhaul trans-axle assemblies		
Inspect, diagnose, and repair hydraulic clutch systems		
Inspect, diagnose, and repair differential systems		
Inspect, diagnose, and repair front drive axle assembly		
Inspect, diagnose, and repair RWD transmission		
Inspect, diagnose, and repair FWD trans-axles		

Instructor's Signature _____ Date _____