AMST1135 - Drivetrains

Credits:	4 (2/2/0)
Description:	This course goes over the theory and operation of manual transmissions, clutch systems and vehicle drive systems. Students learn how engine power is delivered through the transmission, transfer case, driveshaft and differentials. The course covers all-wheel and four-wheel drive systems and operation. Differential design and operation is explored in depth.
Prerequisites:	• AMST1101
Corequisites:	
Pre/Corequisites*:	
Competencies:	1. Exhibit safety precautions and professionalism by maintaining a clean and safe work environment, following OSHA and manufacturer guidelines. 2. Understand, diagnose and repair manual transmission and clutch systems. 3. Understand and identify different vehicle drive systems, including all-wheel drive and four-wheel drive systems. 4. Understand, diagnose and repair four-wheel drive systems, including transfer case shift control devices, automatic transfer case control systems, and related sensors. 5. Understand, diagnose and repair all-wheel drive systems and control devices, including electronically and mechanically controlled clutches, vehicle slip control devices, and related sensors. 6. Disassemble, identify and repair manual transmissions and internal components. 7. Disassemble, identify and repair four-wheel and all-wheel drive systems and internal components. 8. Understand, diagnose and repair drivetrain energy transfer devices, including driveshafts, CV axles, gearing, and related components. 9. Understand, diagnose and repair differential and final drives. 10. Disassemble, identify and repair differentials of multiple designs, including open differential, limited slip differential, full floating differential, semi-floating differential, and thee quarter floating differential. 11. Use service information to locate related information for manual transmissions, clutch systems, vehicle drive devices and drive system controls. 12. Use service information to locate testing procedures for manual transmissions, clutches and vehicle drive systems. 13. Understand, diagnose and repair manual, automatic and vacuum operated locking hub systems. 14. Perform manufacture flow charts and strategy-based testing for manual transmissions, clutches and vehicle drive systems. 15. Learn and understand the description and operation of related systems using service information.
MnTC goal areas:	None

Can be taking as a Prerequisite or Corequisite.