DMT 2320

Division: Career and Technical Education
Department: Automotive Technology
Course: DMT 2320
Title: Advanced Fluid Power Transmission Theory and Lab
Catalog Description:

This course provides instruction on theory and operation of torque converters, powershift, automatic transmissions, service of hydraulic brake systems, and transmission electronic control. This course emphasizes troubleshooting, repair procedures, use of service manuals, and schematic diagrams.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 6; Lecture: 3; Lab: 9
Clock/Hour Requirements: 180
Offered for Non-Credit: No
Prerequisites: DMT 2310

Corequisites: None

Justification:

This is an advanced class on hydraulic systems. This course instructs students about hydraulic transmissions used on various machines. The electronic controls of these transmissions will also be studied. This curriculum was developed using the nationally recognized Automotive Service Excellence (ASE) task lists, manufacturer training materials, advisory committee input, Utah Valley State College syllabi, and Salt Lake Community College documentation.

Student Learning Outcomes:

Upon successful completion, students should be able to:

- identify and explain operation of torque converters
- identify and explain operation of powershift transmissions
- identify and explain operation of Allison automatic transmissions
- identify and explain operation of electronic shift transmissions
- identify and explain operation of hydrostatic drives
- identify and explain operation of hydraulic drives.

Content:

Course objectives will be achieved by providing students with instructional and hands-on experiences in the following areas:

- review of hydrostatic transmissions troubleshooting and application to heavy equipment
- torque convertors
- planetary gearing
- planetary transmission clutch systems
- theory of operation and power flow through planetary transmissions
- troubleshooting, service, and repair procedures for planetary transmissions
- electronic transmission controls
- hydraulic brake service.

General Education Outcomes:

2) Write clearly, informatively, and persuasively.

Students will complete written service reports on each laboratory project. These reports must be written in a clear, concise, and effective manner as this is the means by which customers make repair decisions. These reports are reviewed and returned to students with suggestion for improvement.

4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media.

Students will utilize electronic and written reference manuals and computer diagnostics to identify, troubleshoot, and repair transmissions, brakes, and other diesel components.

Key Performance Indicators:

In class:

- Student scores will be based on: written assignments (20%-30%), lab exercises (40%-50%), and quizzes and tests (20%-30%).

Following class:

- Upon completion of the course, competency will be demonstrated in subsequent courses and on customer projects. Students will also use on the job service reports and repair orders to verify skills acquired.

Representative Text and/or Supplies:

- Norman, Schariff, Corinchock, *Heavy Duty Truck Systems,* current edition, Delmar Publishers.

Optimum Class Size: 10
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

Dale Jensen, ,

I hereby find this course consistent with the goals and resources of the Automotive Technology Department:

Brent Reese, BS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)