

Course Objectives/Course Outline
Spokane Community College

Course Title: Power Train Applications

Prefix and Course Number: HEQ 132

Course Learning Outcomes:

By the end of this course, a student should be able to:

- perform failure analysis testing on bearings and seals
- repair and maintain braking systems components
- repair air, hydraulic, and electric controls
- disassemble, repair, and reassemble a variety of manual transmission types
- analyze auxiliary transmissions, transfer cases, and power take-off units for failure
- lubricate bearings and seals

Course Outline

- I. Bearings and Seals
 - A. Maintenance
 - B. Lubrication
 - C. Service Procedures
 - D. Failure Analysis
- II. Repair and Maintenance of Brakes
 - A. Braking System Components
 - B. Diagnosis/Repair Procedures
 - C. Maintenance Methods
 - D. Industry Standards
- III. Clutches
 - A. Diagnosis/Repair Procedures
 - B. Maintenance Methods
- IV. Manual Shift Transmissions
 - A. Disassembly
 - B. Failure Analysis
 - C. Diagnosis/Repair Procedures
 - D. Reassembly
 - E. Bench Testing
- V. Differentials and Final Drive Units
 - A. Disassembly
 - B. Diagnosis/Repair Procedures
 - C. Reassembly
 - D. Testing
- VII. Fluid Couplings and Automatic Transmissions
 - A. Valve Body Disassembly
 - B. Diagnosis/Repair Procedures
 - C. Maintenance Methods
- VIII. Safety
 - A. Shop Safety
 - B. Tool Safety
 - C. Safety Awareness