Course Syllabus

DEMR 2344 (3:2:4)

Powershift and Hydrostat Transmissions II

Diesel Service Technology

Industrial Technology

Technical Education Division

South Plains College

Levelland, Texas

Spring 2024

Course Title: Powershift and Hydrostat Transmissions II

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General Course Information

Course Description

The purpose of this course is to provide the student with an advanced course of study in diagnostics, overhaul and repair cost analysis of Powershift and Hydrostat Transmissions, and system controls.

Course Outline

Identify powershift and hydrostat transmissions systems and components
Understand the behavior and function of Powershift and Hydrostat systems
Diagnose and rebuild Powershift and Hydrostat systems
Analyze repair cost
Diagnose and repair system control circuits.

Course Competencies / Learning Outcomes

This course uses established industry competencies. Upon completion of this course the student must demonstrate the ability to rebuild and understand Powershift and Hydrostat Transmissions, as well as demonstrate the ability to diagnose a failure and advise on the correct course of action based on cost analysis.

SCANS and Foundation Skills

C1 through C20 and F1 through F17. A description of these SCANS skills is printed on the back of the syllabus cover sheet for reference.

Verification of Workplace Competencies

All graduating students in the diesel service technology program will have a comprehensive, exit review exam administered in order to comply with the state requirement for a capstone learning experience.

Specific Course / Instructor Requirements

Required Materials

Cengage Unlimited-Access (12 Months) ISBN: 9780357700044 - Available in the bookstore, you will only need one copy for all of your Diesel courses. **As returning Seniors you should not need to purchase any books.**
Tools per provided list.
Notebook (quality, you will be using it in the lab. One may be shared across all of your DST classes.)
Writing utensils.
Safety Glasses.
Safety Toe Shoes.
Pocket Knife (not a box cutter).

Recommended Materials

Daily or Weekly Planner

Syllabus Agreement:
Read, sign, and submit the Student Syllabus Agreement form by the due date to avoid administrative drops. The syllabus serves as a contract outlining course expectations for both students and instructors.

Safety:
Students must pass the Safety Test with a score of 100 before participating in lab work. Non-compliance with safety and shop rules may lead to dismissal or administrative drop.

Student Conduct:
Follow the Student Guide for conduct not covered in this syllabus. Failure to adhere to lab rules may result in excusal from class at the instructor's discretion.

Academic Integrity:
Refer to the current Student Guide for policy details. Cheating or plagiarism will result in a zero grade, with potential disciplinary action.

Attendance:

More than two (2) absences are considered excessive.
Tardiness: Two (2) tardy instances equal one absence.
Sleeping in class or lab leads to dismissal for safety reasons, counted as an absence.
Work Missed if Absent:
Students are responsible for all work covered during absences. Unavoidable absences may allow makeup work, determined by the instructor.

Late Assignments:
Late assignments result in a zero grade. Exceptions may be considered with penalized grades, subject to instructor approval.

Personal Property Responsibility
As future Diesel Technicians, it's crucial to be accountable for your personal property. The school and instructors are not responsible for any loss, damage, or theft of your belongings. Follow these guidelines:

1. **Secure Your Tools:** Keep your personal tools and belongings in designated areas or securely stored during class and on campus.
2. **Avoid Leaving Valuables Unattended:** Never leave valuable items unattended. Keep them with you or secure them in lockers.
3. **Use Locks:** When necessary, use locks on toolboxes or storage containers to add an extra layer of security.
4. **Take Your Toolbox Home:** Students must take their toolbox home before the end of the academic year or within 5 days of withdrawing from class. This ensures the safety and security of your tools.
5. **No School Property in Your Toolbox:** Students are prohibited from keeping any school property in their toolbox. School property must be returned to designated areas promptly.
6. **Report Any Issues:** If you notice anything suspicious or concerning, report it promptly to an instructor or campus security.
7. **Label Your Tools:** Ensure your tools are labeled with your name for easy identification.

Remember, personal property is your responsibility. Following these guidelines will help protect your tools and belongings throughout your training. The school and instructors are not liable for any losses, so take proactive steps to safeguard your possessions.

Grading
Exams will be given periodically throughout the semester at the instructor's discretion. Lab assignments will be given and completed at the assigned dates. At the end of the semester, a comprehensive final exam will be given. There are five categories taken into consideration when computing the final semester grades: Lab Assignments: 50%, Tests: 25%, Homework 20%, Attendance 5%.

a) Lab Assignments 50%
   i) The Lab Assignment section includes, but is not limited to, hands on assignments, lab tests lab task sheets and daily lab grades.
   ii) Point deduction from lab:
      (1) Late or not showing up for the end of semester clean-up will result in forfeit of all lab points.
      (2) Leaving a lab project partially disassembled, leaving out parts, or not turning in complete work order results in a zero on that assignment.
      (3) Damaging lab projects will result in a deducted grade for projects as follows:
         (a) Damaged, but repaired correctly -5 points
         (b) Damaged, required part replacement -10 points
         (c) Damaged, not repairable -50 points
         (d) Damaged, abandoned -100 points
      (4) Absences will result in a zero lab grade for each day you are absent.
   iii) **Note**: When you apply for a signature on an assignment, you will be randomly, verbally, quizzed on your knowledge of the project, procedures, etc. Inability to answer questions will result in an incomplete until you comply with the research assigned at that moment.
b) Tests 25%
   i) Midterm tests cover several sections of related materials. Absence on test days results in a zero grade.
c) Homework: Quizzes, Book Assignments, Worksheets, etc. 20%
   i) Daily reading assignments, workbook assignments and Blackboard quizzes are designed help you learn the material more efficiently and prepare you to participate in class. You are expected to show your work through the assignments under Homework.
d) Attendance 5%
   i) Showing up is a major factor in your success as a technician and your ability to get and keep a job. Showing up on time and staying the whole time will result in a 100 for the day. Late arrival, returning late from break or disappearing for significant amounts of class time will result in a Tardy, creating a 50 for the day. No show results in a 0 for the day. In the case of an emergency or illness, timely notification of the situation (I don't need details), and as applicable a doctor's note, can adjust those grades.

e) Grade Levels: There are four levels of attainable grades in the diesel technology program. The levels are A - (90 and above); B - (80-89); C - (70-79); F - (69 and below). This grading policy follows industry standards used in certification testing.

Hazardous Materials

Students will come in contact with chemicals and other materials, which come under the "Hazardous Material" classification as defined by Title 83, Article 5182b of the Hazard Communication Act. Material Safety Data (MSD) information will be posted in the lab area. Safety information will be given and shown in class before the safety test. (Examples of materials: used engine oil, fuel, antifreeze, etc.)

Students can find statements for: Intellectual Exchange, Disabilities, Non-Discrimination, Title IX Pregnancy Accommodations, CARE (Campus Assessment, Response, and Evaluation) Team, and Campus Concealed Carry at https://www.southplainscollege.edu/syllabusstatements/

DST Classroom and Lab Area Rules

1. Always follow safety rules. They are for your protection.
2. Personal Protection Equipment: Safety glasses will be properly worn at all times. Acceptable lens colors: clear, yellow colored lenses. Mirrored or dark lenses will be permitted for outside work only. Sunglasses will not be allowed indoors or outdoors. All safety glasses must be "ANSI Z-87-1" or better certified. Safety toe footwear are required and will be worn at all times. Non-compliance will result in dismissal for the day with an absence.
3. Service bay doors will be either fully raised or lowered. Not left partially open.
4. No tobacco products are allowed in campus buildings, and smoking must not be done within 25 feet of the building, per campus policy. This policy includes vaping.
5. No shorts to be worn in the lab areas. Clothing should be well-fitting and appropriate for work. Clothing with obscene, profane or otherwise inappropriate language or images will not be allowed.
6. No student parking is allowed inside the south fenced-in area.
7. The DST program adheres to the South Plains College zero tolerance policy for controlled substances. Should an instructor suspect a student is under the influence of drugs or alcohol while on campus, they will remove the student from class and/or lab and the appropriate disciplinary measures will be enforced.
8. All electronic devices will be used only for course related work. Inappropriate and/or unrelated use of electronic devices, including cell phones, can result in your dismissal for the day with an absence.
9. You are required to have your own tools to be able to participate in class.
10. Do not store South Plains College tools, equipment or project parts in your toolbox. If you do put SPC property in your box, we can and will use any means necessary to open your box if you are not present. While your box is present in our facility, it is subject to search at any time at an instructor's discretion. We are not responsible for any damage or losses that may occur due to this policy. You are welcome to register a spare key with your instructor for the semester to avoid such situations.
11. In accordance with Texas Commission on Environment Quality (TCEQ), there are to be no open or unlabeled containers in the lab or classroom areas. Only small quantities may be held in open containers, which must be labelled, and currently in use.
12. All SPC property, including equipment keys and tools, must be put away at class clean up. You are responsible for putting away all your personal tools, sorting equipment neatly and disposing of all trash daily.
13. When lifting/moving materials, equipment, etc with the forklift, gantry or engine lifts must be safely secured and use of a safety chain is required where applicable.
14. Maintain awareness of your surroundings and your peers in the lab.
15. Maintain a clean workspace, clean up spills, debris, etc. immediately, and clean up your workspace and tools daily.
16. Do not drive bearings with hard steel tools.
17. Do not spin bearings or turbochargers with compressed air.
18. Intentional destruction of school property will result in immediate dismissal from the program.
19. You will be around chemicals, electricity and moving equipment, exercise caution and self-awareness in your actions and daily assignments.

Student Syllabus Agreement

I, _____(Name), have read and understand the syllabus for DEMR 2344 Powershift and Hydrostat Transmissions II, the rules outlined there, as well as the attendance, academic integrity and grading policies. I agree to abide by and follow the rules and policies of the syllabus, as well as the South Plains College Student Handbook. I understand that if I do not pass the Safety Test with a score of 100 I will not be allowed to continue in the program. I understand that by not reading the class syllabus, signing and turning in this Student Syllabus Agreement I am forfeiting my enrollment in the class and I will be dropped.

Date: _____

Signature: _____

SCANS COMPETENCIES

C-1 **TIME**--Selects goal--relevant activities, ranks them, allocates time, and prepares and follows schedules. C-2 **MONEY**--Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives C-3 **MATERIALS & FACILITIES**-Acquires, stores, allocates, and uses materials or space efficiently. C-4 **HUMAN RESOURCES**--Assesses skills and distributes work accordingly, evaluates performances and provides feedback.

INFORMATION--Acquires and Uses Information C-5

Acquires and evaluates information.

C-6 Organizes and maintains information.

C-7 Interprets and communicates information.

C-8 Uses computers to Process information.

INTERPERSONAL--Works With Others

C-9 Participates as members of a team and contributes to group effort.

C-10 Teaches others new skills.

C-11 Serves clients/customers--works to satisfy customer's expectations.

C-12 Exercises leadership--communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies.

C-13 Negotiates-Works toward agreements involving exchanges of resources resolves divergent interests.

C-14 Works with Diversity-Works well with men and women from diverse backgrounds. **SYSTEMS--Understands Complex Interrelationships**

C-15 Understands Systems--Knows how social, organizational, and technological systems work and operates effectively with them

C-16 Monitors and Correct Performance-Distinguishes trends, predicts impacts on system operations, diagnoses systems' performance and corrects malfunctions.

C-17 Improves or Designs Systems-Suggests modifications to existing systems and develops new or alternative systems to improve performance.

TECHNOLOGY--Works with a variety of technologies

C-18 Selects Technology--Chooses procedures, tools, or equipment including computers and related technologies.

C-19 Applies Technology to Task-Understands overall intent and proper procedures for setup and operation of equipment.

C-20 Maintains and Troubleshoots Equipment-Prevents, identifies, or solves problems with equipment, including computers and other technologies.

FOUNDATION SKILLS

BASIC SKILLS--Reads, writes, performs arithmetic and mathematical operations, listens and speaks F-1 Reading--locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules.

F-2 Writing-Communicates thoughts, ideas, information and messages in writing, and creates documents such as letters, directions, manuals, reports, graphs, and flow charts.

F-3 Arithmetic--Performs basic computations; uses basic numerical concepts such as whole numbers, etc. F-4 Mathematics--Approaches practical problems by choosing appropriately from a variety of mathematical techniques.

F-5 Listening--Receives, attends to, interprets, and responds to verbal messages and other cues.

F-6 Speaking--Organizes ideas and communicates orally.

THINKING SKILLS--Thinks creatively, makes decisions, solves problems, visualizes, and knows how to learn and reason

F-7 Creative Thinking--Generates new ideas.

F-8 Decision-Making--Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative.

F-9 Problem Solving--Recognizes problems and devises and implements plan of action.

F-10 Seeing Things in the Mind's Eye--Organizes and processes symbols, pictures, graphs, objects, and other information.

F-11 Knowing How to Learn--Uses efficient learning techniques to acquire and apply new knowledge and skills. F-12 Reasoning--Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

PERSONAL QUALITIES--Displays responsibility, self-esteem, sociability, self-management, integrity and honesty

F-13 Responsibility--Exerts a high level of effort and preservers towards goal attainment.

F-14 Self-Esteem--Believes in own self-worth and maintains a positive view of self.

F-15 Sociability--Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings.

F-16 Self-Management--Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.

F-17 Integrity/Honesty--Chooses ethical courses of action.