

DISL 125-INTRODUCTION TO FLUID POWER 4 CREDITS

SYLLABUS

CATALOG DESCRIPTION

Fluids and their ability to accomplish work. Hydrodynamic, hydrostatic, and computer controlled hydraulic systems and components will be covered. Safety will be strictly enforced. A grade of "C" or better must be earned to receive credit for this course.

Prerequisites: DISL 110

Semester Offered: Spring

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

1. To provide the student with the techniques and procedures to adjust, diagnose, service, and repair fluid power systems found on on-highway trucks and mobile construction equipment.

Specific Learning Objectives:

Upon successful completion of the course, the student will be able to...

1. Understand the special safety concerns when working on fluid power systems.
2. Using a fluid power schematic be able to identify areas of trapped energy within the system.
3. Identify the signs of an injection injury.
4. Know how to properly diagnose and repair fluid power system to avoid injury or damage to property.
5. Interpret hydraulic symbols using schematics and diagrams.
6. Know the basic theory and principles of hydraulic fluid power.
7. Identify and understand the operation and usage of hydraulic pressure control valves.
8. Identify and understand the operation and usage of different types of hydraulic pumps.
9. Understand the operation of accumulators.
10. Identify and understand the operation of hydraulic actuators (motors, rams, cylinders, etc.).
11. Identify and understand the operation of flow control and directional control valves.
12. Understand the operation and construction of reservoirs, coolers, and hoses.
13. Identify different types of hydraulic lines and fittings and be able to inspect, remove, and replace these hoses and lines.
14. Understand basic hydraulic maintenance and filtration.
15. Know how to select and safely use diagnostic instruments.
16. Perform and interpret the results of hydraulic system tests on pumps to include:
 1. Inlet restriction
 2. In-circuit flow
 3. Direct access flow
 4. Pump case pressure
17. Perform and interpret the results of hydraulic system tests on system components to include:
 1. Pressure Control Valves
 2. Check Valves
 3. Cylinders
 4. Directional Control Valves
18. Perform and interpret the results of hydraulic system tests on motors to include:
 1. Internal drain motor direct access flow test
 2. Internal drain motor in-circuit flow test
 3. Motor case drain pressure test
19. Inspect, remove, replace, or repair a hydraulic pump, hydraulic cylinder, hydraulic spool valve, hydraulic relief valve and various hydraulic system valves.
20. Understand the basic set up and theory of operation of a closed loop (hydrostatic) system.