

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: TEED 153

Credits: 3-2-2

Course Title: Hydraulic/Fluid Dynamics with Lab

Course Prerequisite: MATH 099 and TEED 101

Textbook(s): Klette, Patrick. Fluid Power Systems, 2nd edition. American Technical, 2013.
ISBN: 9780826936349

Course Description: A course designed for the industrial skilled apprentice. Major topics include pressure units applicable to hydraulic systems, Pascal's law, transmission of energy in hydraulic systems, mechanical advantage, pumps, motors, accumulators, cylinders, maintenance, safety, preventative maintenance, and troubleshooting.

Learning Outcomes:

At the end of the course, the student will:

- A. demonstrate familiarization with symbols and terminology used to design, develop, and analyze hydraulic systems and pneumatic systems;
- B. determine and measure force transmitted through hydraulic systems and pneumatic systems;
- C. describe Hydraulic Principles;
- D. describe Pneumatic Principles; and
- E. demonstrate fluid and pneumatic characteristics and applications

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s).)

1. define terminology and measurement used in hydraulic/pneumatic circuits; (B)
2. describe how hydraulic/pneumatic transmission of force and energy is accomplished; (A,B)
3. describe the operation at the suction side of a pump; (C)
4. list different types of hydraulic/pneumatic actuators; (C, D)
5. describe how control of hydraulic/pneumatic energy is accomplished; (E)
6. identify check valves, accumulators, and cylinders; (C, D)
7. identify directional valves and explain the difference between 4-way, 3-way, and 2-way controllers valves; (C, D)
8. draw the symbol and explain operation of "flow control"; (A, B, C, D)
9. explain the uses of pressure control valves, pumps, and hydraulic motors; (C, E) and
10. describe hydraulic fluids, reservoirs, coolers, and filters. (E)

Course Requirements: Complete all homework assignments, lecture tests and final exam.

Course Grading Scale:

90 – 100 = A

80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Attendance Policy: The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams, and/or clinical fees.

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