

**CASPER COLLEGE COURSE SYLLABUS**  
**DESL 1850, Section 01 – Basic Hydraulics**

**Semester/Year:** Fall 2015

**Lecture Hours:** 2

**Lab Hours:** 2

**Credit Hours:** 3

**Class Time:** 1:00 - 2:50 P.M.

**Days:** M

**Room:** CS 100A

**Lab Times:** 3:00 - 4:50 P.M.

**Days:** M

**Room:** CS 100

**Instructor's Name:** Mr. Blesi

**Instructor's contact information:**

Mr. Blesi

**Office Phone:** 268-2459

**Office Number:** GW-116F

**Email:** jblesi@caspercollege.edu

**Office hours:** MW 9:00-10:00 a.m.

M 12:00 -1:00 p.m. (CS)

W 10:00 - 11:00 a.m.

Th 12:00 - 1:00 a.m. (CS)

**Course Description:**

Principles of hydraulic systems and components used in mobile equipment. Factors of consideration are the selection, installation, operation, and maintenance of hydraulic systems.

**Statement of Prerequisites:** None.

**Goal:**

Demonstrate ability to use results of force and flow in hydraulic and pneumatic systems.

**Outcomes:**

Use quantitative analytical skills to evaluate and process numerical data.

**Course Objectives**

1. Relating force, pressure, and area to hydraulic system operation.
2. Relating flow, velocity, and area to hydraulic system operation.
3. Recognition of hydraulic symbols and terminology.
4. Tracing flow through a hydraulic system.
5. Evaluate operation of pumps, valves, and cylinders.
6. Identify and exercise appropriate use of safety equipment.

**Methodology:**

Students should read the text sections prior to arriving at class. The Instructors will use the text to discuss the material and answer any questions. Quizzes and worksheets will be used nearly every class to reinforce the lecture and text material. Outcomes will be judged by quizzes, laboratory and the final. The course consists of two interrelated parts. The lecture portion presents basic theory using oral, video, software, demonstrations, and handouts. The laboratory portion is designed to give the student a chance to use the theory with actual devices. The first step in dealing with

hydraulics is to apply theory learned in class to the laboratory.

**Evaluation Criteria:**

Grade is based on worksheets, quizzes, participation and final exam. Quiz material will be based upon the week's assigned reading, the previous weeks lecture and laboratory, and any returned quizzes.

Percent of total grade for required work is shown below.

Worksheets/quizzes	60%
Participation	20%
Final	20%

Final grade for course is on the following scale:

90%-100%	A
80%-89%	B
70%-79%	C
60%-69%	D
00%-59%	F

**Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.**

**Required Text, Readings, and Materials:**

Fluid Power Basics. Parker-Hannifin Corporation, 1993.

Fluid Power Data Book.

Inexpensive calculator, note taking material, safety glasses, and steel toe boots.

**Class Policies: Last Date to Change to Audit Status or Withdraw with a W Grade:**

November 12, 2015

All laboratories must be done and handed in to pass the class.

No late materials will be accepted after the final exam.

Test grades are based on correct work shown...which means if the student is not there, the grade is zero. A makeup may be given depending on the reason, the status of the student's homework, and attendance.

Makeup's will require prior notice or a written excuse for not being present. **Quizzes may only be made up prior to the start of the next class.** It is the student's responsibility to arrange a time with the instructor to makeup a quiz.

Students are expected to read the material listed on schedule prior to coming to class.

**Safety:** Personal and equipment safety standards will be strictly enforced. *It is the individual's responsibility to develop and use a safe work attitude.* Disregard for the safety of yourself and/or others will result in dismissal from the class.

**Student Rights and Responsibilities:** Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

**Chain of Command:** If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

**Academic Dishonesty:** (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

**Official Means of Communication:** Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

**ADA Accommodations Policy:** If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, [bheuer@caspercollege.edu](mailto:bheuer@caspercollege.edu). The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**LECTURE SCHEDULE****DESL-1850****Fall 2015**

Week	Lesson	Topic
1		Introduction, symbols
2	1	Physical world of a machine, area, unit analysis
3		Labor Day-no class
4	2	Force, pressure, energy
5	3	Energy, viscosity, flow, velocity
6	4	Valves, actuators, and cylinders
7	7	Pumps and compressors
8	8	Check valves, cylinders, and motors
9		fall break-no class
10	9	Flow control valves
11	10	Directional control valves
12	11	Pressure control valves
13	13	Fluid conditioning
14	15	Fluid conductors and connectors
15	5, 6	Pneumatic systems
16	14	Air preparation
17		Final (Wednesday, December 16 <sup>th</sup> from 8:00 to 10:00 a.m.)

Syllabus subject to change with Notice!

## TENTATIVE LABORATORY SCHEDULE

Week	Worksheet	Topic
1	1	trainer familiarization and basic circuit
2	2	resistance and series circuit
3		labor day
4	3	force, pressure, area
5	4	single rod (unbalanced) cylinder
6	5	hydraulic power
7	6	pump breakdown
8	7	series versus parallel circuits
9		fall break
10	8	intensification and regeneration
11	9	basic flow control circuits
12	10	sequence circuit
13	11	counterbalance valves
14	12	pressure reducing
15		make up
16		clean up

Laboratory Syllabus subject to change without Notice!!!