

**El Paso Community College**  
**Syllabus**  
**Part II**  
**Official Course Description**

<b>SUBJECT AREA</b>	<u><b>Industrial Manufacturing</b></u>
<b>COURSE RUBRIC AND NUMBER</b>	<u><b>HYDR 1445</b></u>
<b>COURSE TITLE</b>	<u><b>Hydraulics and Pneumatics</b></u>
<b>COURSE CREDIT HOURS</b>	<u><b>4            3    :    3</b></u> Credits            Lec            Lab

**I. Catalog Description**

Discussion of the fundamentals of hydraulics and pneumatics, components of each system, and the operations, maintenance, and analysis of each system. **(3:3). Lab fee.**

**II. Course Objectives**

Upon satisfactory completion of this course, the student will be able to:

- A. Safety
  - 1. Demonstrate safety principles in the workplace, including lock-out/tag-out.
  - 2. Perform safety and environmental assessment.
  - 3. Identify unsafe conditions and take corrective action.
  
- B. Introduction to Fluid Power
  - 1. Define hydraulic and pneumatic fundamentals.
  - 2. Explain hydraulic and pneumatic applications.
  
- C. Fluid Power Standards and Symbols
  - 1. Explain hydraulic and pneumatic symbols.
  - 2. Design and examine hydraulic and pneumatic circuits.
  - 3. Identify schematics and power diagrams.
  
- D. Fluid Power Systems
  - 1. Define hydraulic and pneumatic controls and characteristics.
  - 2. Evaluate hydraulic and pneumatic systems, including check and document calibration of gauges and other data collection equipment.
  - 3. Identify sources of power.
  - 4. Examine fluid storage and distribution.
  - 5. Condition the system fluid.
  - 6. Identify types of actuators.
  - 7. Control the system.
  - 8. Identify types of accumulators.
  
- E. Maintenance Awareness
  - 1. Describe the installation and maintenance of hydraulic and pneumatic systems.
  - 2. Perform preventive maintenance and routine repair.

- F. Green Production
  - 1. Train workers in environmental issues.
  - 2. Reprocess materials by recycling and reuse throughout product life cycle to optimize waste reduction.

**III. THECB Learning Outcomes (WECM)**

- 1. Demonstrate the operation of basic hydraulic and pneumatic systems including associated instruments.
- 2. Interpret schematics.
- 3. Troubleshoot systems.
- 4. Design a schematic drawing of a working system.

**IV. Evaluation**

Students must demonstrate the knowledge and skills stated in the objectives in order to complete the course. Exams, quizzes, and lab assignments will be determined by the instructor.

The final grade report will be based on the percentage of the total points earned.

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Students should be able to compute their grade average anytime during the course. Missed assignments and make-up tests will be given at the discretion of the instructor.

**V. Disability Statement (Americans with Disabilities Act [ADA])**

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024)

**VI. 6 Drop Rule**

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

**VII. Title IX and Sex Discrimination**

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic

violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.