

## **Flow And Measurement Calibration (INTC1358)**



**Credit:** 3 semester credit hours (3 hours lecture)

**Prerequisite/Co-requisite:** None.

### **Course Description**

A study of Fluid Power. Hydraulics and Pneumatics. Comprehensive exposure to the fluid field, ranging from historical information to details on the design and operation of hydraulic and pneumatic components, circuits, and systems.

### **Required Textbook and Materials**

Fluid Power, ISBN number 9781605259314

1. Notebook

### **Course Objectives**

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

1. Perform flow calculations.
2. Select the proper primary flow element under stated conditions.
3. Understand basic fluid power concepts, systems and components.

### **Course Outline**

- A. Introduction
  1. Introduction of faculty and students
  2. Review Syllabus
- B. Review Class Policies
  1. Definition of Fluid Power
  2. Fluid power industry
  3. Fluid Power Systems
  4. Advantages and Disadvantages of a Fluid Power System
- C. Fluid Power System
  1. Functions
  2. Structure
  3. Basic System Components
  4. Basic System Operation
- D. Fluid power Standards and Symbols
- E. Controlling the System
- F. Compressed Air
- G. Conditioning and Distribution
- H. Controlling the Pneumatic System
- I. Apply Pneumatic Power

### Grade Scale

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

### Course Requirements

1. Introduction to the Fluid Power field.
2. Hydraulic Systems.
3. Pneumatic Systems.
4. Understanding of the operation of fluid power component parts and circuits.
5. Concepts in designing functional circuits.
6. Fluid Power : Safety and Health

### Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:

<http://www.lit.edu/depts/stuserv/special/defaults.aspx>

### Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu) or obtained in print upon request at the Student Services Office.

### Course Schedule

Week	Topic	Reference
1	Course introduction, and policies <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter exercises and worksheets</li></ul>	Handouts
2	Introduction to Fluid Power <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter exercises and worksheets</li></ul>	Chapter 1
3/4/5	Systems/Standards and Symbols <ul style="list-style-type: none"><li>• Lecture:</li><li>• Test 1</li></ul>	Chapter 2/4

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Course Syllabus

<b>Week</b>	<b>Topic</b>	<b>Reference</b>
6/7	Safety and Health/Hydraulic Fluids <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter exercises and worksheets</li><li>• Chapter exercises and worksheets</li></ul>	Chapter 5/6
8/9	Controlling the System <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter exercises and worksheets</li><li>• Test 2</li></ul>	Chapter 10
10	Compressed Air/Conditioning/Distribution <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter Exercises and worksheets</li></ul>	Chapters 14/16
11/12	Directional Control Valves <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter Exercises and worksheets</li></ul>	Chapters 18
13	Pressure Control Valves <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter Exercises and worksheets</li></ul>	Chapter 18
14/15	Flow Control Valves <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter Exercises and worksheets</li><li>• Test 3</li></ul>	Chapter 18
16	Applying Pneumatic Power <ul style="list-style-type: none"><li>• Lecture:</li><li>• Chapter Exercises and worksheets</li><li>• Test 4</li><li>• Review for Final</li></ul>	Chapter 19