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 978-1-60525-081-6

1. Notebook

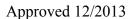
Course Objectives

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

- 1. Perform flow calculations. (SCANS C5.4, C19.4, C20.3, F1.3, F2.3, F3.4, F4.4, F5.3, F9.4, F12.4)
- 2. Select the proper orifice under stated conditions. (SCANS C5.4, C19.4, C20.3, F1.3, F2.3, F3.4, F4.4, F5.3, F9.4, F12.4)
- 3. Understand basic fluid power concepts, systems and components. (SCANS C5.4, C19.4, C20.3, F1.3, F2.3, F3.4, F4.4, F5.3, F9.4, F12.4)

Course Outline

- A. Introduction
 - 1. Introduction of faculty and students
 - 2. Review Syllabus
- B. Review Class Policies
 - 1. Definition or 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	В
70 - 79	C
60 - 69	D
0 - 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

Activity	Percentage
Classwork	20%
Quizzes	30%
Exams	50%
Total	100%

Late Penalties will be assessed on all work turned in late. 10 points per day

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

Attendance Policy:

- 1. Missing more than 20% of classes will result in an automatic "F" for the course.
- 2. Absences are counted for unexcused, excused and coming to class late.
- 3. Missing more than 20% of a class period will count as an absence.
- 4. Being tardy 3 times equals 1 absence.

Course Policies

- 1. No food, drinks, or use of tobacco products in class.
- 2. No foul or harsh language will be tolerated
- 3. Turn off all Cell Phones during lectures
- 4. Headphones may be worn only upon Instructor approval
- 5. Do not bring children to class.

- 6. No Cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result from expulsion from LIT.
- 7. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.

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 office in Student Services, Cecil Beeson Building.

Course Schedule

Week	Topic	Reference
1	Course introduction, and policies	Handouts
	• Lecture:	
	 Chapter exercises and worksheets 	
2	Introduction to Fluid Power	Chapter 1
	• Lecture:	
	 Chapter exercises and worksheets 	
3/4/5	Systems/Standards and Symbols	Chapter 2/4
	• Lecture:	
	• Test 1	
6/7	Safety and Health/Hydraulic Fluids	Chapter 5/6
	• Lecture	
	 Chapter exercises and worksheets 	
	 Chapter exercises and worksheets 	
8/9	Controlling the System	Chapter 10
	• Lecture:	
	 Chapter exercises and worksheets 	
	• Test 2	
10	Compressed Air/Conditioning/Distribution	Chapters 14/16
	• Lecture:	
	 Chapter Exercises and worksheets 	
11/12	Directional Control Valves	Chapters 18
	• Lecture:	
	 Chapter Exercises and worksheets 	
13	Pressure Control Valves	Chapter 18
	• Lecture:	

INTC 1301 Course Syllabus

Week	Topic	Reference
	 Chapter Exercises and worksheets 	
14/15	Flow Control Valves • Lecture: • Chapter Everaises and worksheets	Chapter 18
	Chapter Exercises and worksheetsTest 3	
16	 Applying Pneumatic Power Lecture: Chapter Exercises and worksheets Test 4 Review for Final 	Chapter 19