

Instrumentation Drafting Technology (DFTG 2308)



Credit: 3 semester credit hours (2 hours lecture, 4 hours lab)

Prerequisite/Co-requisite: DFTG 1305, DFTG 1317

Course Description

Study of mechanical drawings using dimensioning and tolerances, sectioning techniques, orthographic projection, and pictorial drawings.

Required Textbook and Materials

1. *Introduction to Process Instrumentation*, Howell Training Co.
 - a. 13831 Northwest Freeway, Suite 520, Houston, TX 77040
2. Flash Drive – 1GB Minimum
3. Notebook

Course Objectives

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

1. Identify ISA symbols and interpret basic flow sheet layout principles. C18.3, F8.3, F10.3
2. Exhibit comprehension of instrumentation/flow diagram relationships and flow sheet/plot plan/piping/interrelationship. C19.3, F1.3
3. Prepare flow sheet (process and mechanical) diagrams. C19.3, F1.3, F5

SCANS Skills and Competencies

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies.

Course Outline

- | | |
|---|----------------------------|
| A. Introduction | 1. Basic Dimensioning |
| 1. Introduction of faculty and students | 2. Tolerances |
| 2. Review Syllabus | 3. Orthographic Projection |
| 3. Review Class Policies | 4. Pictorial Drawings |
| 4. Review Lab Assignment | D. Sections |
| B. Instrumentation basics | 1. Full Sections |
| 1. Instrumentation symbols | 2. Half Sections |
| 2. Block symbols | 3. Removed Sections |
| C. Dimensioning | 4. Rotated Sections |

Approved 3/2013

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Course Syllabus

E. Orthographic Projections

1. Multiviews
2. The Glass Box
3. Transfer Dimension
4. Revolutions

F. Pictorial Drawings

1. Isometric

2. Cabinet

3. Perspective

G. Miscellaneous instrumentation drawings

1. Instrumentation location plan
2. Instrumentation installation detail

Grade Scale

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

Course Evaluation

Final grades will be calculated according to the following criteria:

<i>Activity</i>	<i>Percentage</i>
Major test	30%
Drawings	30%
Class participation	10%
Final Project	30%

Attendance Policy

1. 5 Absences allowed. 4 late arrivals are equivalent to 1 absence
2. 2 Points per absence off final grade after initial 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.
8. Back-ups

It is the student's responsibility to make back-up copies of their work. Do not rely on the server to be their 100% of the time. I cannot help you if you lose your work. Remember that in order for your work to be graded, it must be in your account on the server.

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Course Syllabus

9. Internet Usage

- a. Classroom computers have access to the internet.
- b. Student usage of the internet will be monitored.
- c. Proper usage of the internet will be allowed. Used for classroom research or as directed.
- d. Any unauthorized use of the internet will not be tolerated.
- e. Improper usage of the internet, such as profanity, pornography, gambling, etc... will result in disciplinary action not limited to expulsion from LIT.

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 <ul style="list-style-type: none">• Lecture• Lab: Practice Drawing	Handouts
2	Introduction to instrumentation <ul style="list-style-type: none">• Lecture• Lab: Create symbols	Symbols chart
3/4	Attributes <ul style="list-style-type: none">• Lecture• Lab: Block symbols• Project: As Assigned	Symbols chart
5/6	Instrument fittings <ul style="list-style-type: none">• Lecture• Lab: Chapter Exercises• Project: As Assigned	Workbook 1
7/8	Instrument fittings <ul style="list-style-type: none">• Lecture• Lab: Chapter Exercises• Project: As Assigned	Workbook 2
9/10	Loop sheets <ul style="list-style-type: none">• Lecture• Lab: Chapter Exercises• Project: As Assigned	Workbook 3
11/12	P & I. D. ;S <ul style="list-style-type: none">• Lecture• Lab: Chapter Exercises	Workbook 4

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Course Syllabus

Week	Topic	Reference
	<ul style="list-style-type: none">• Project: As Assigned	
13	P & I. D.'S <ul style="list-style-type: none">• Lecture• Lab: As Assigned	Workbook 5/6
14/15/16	Final Project <ul style="list-style-type: none">• Lecture• Project: As Assigned	

Contact Information:

Instructor: Mr. Clifford L. (Larry) Breaux

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Office Hours: 7:30 am -12:30 am M-F