APRT 150A: AIR DISTRIBUTION & MANUFACTURING SYSTEMS (TAB-3)

Foothill College Course Outline of Record

Heading	Value
Units:	4.5
Hours:	30 lecture, 78 laboratory per quarter (108 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Sheet Metal Testing & Air Balance Apprenticeship Program.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- A successful student will be able to identify and explain various pneumatic control systems.
- A successful student will be able to identify and compare direct digital control systems.

Description

The difference, advantages and disadvantages of pneumatic and direct digital control systems will be compared to electrical systems. Students will use laptop computers to access a control system from a remote location; take readings and make minor adjustments to the system. Clean room operation and protocol will be examined.

Course Objectives

The student will be able to:
A. Identify and explain various pneumatic control systems
B. Identify and compare direct digital control systems
C. Learn to operate computers relating to control systems
D. Discuss basic clean room protocol

Course Content

A. Pneumatic-controlled systems
1. Applications of air distribution for pneumatics controls
B. Direct digital-controlled air distribution systems
1. Applications of air distribution for direct digital controls
C. Computer related to control systems
1. Basic computer operation and control systems
2. Practice using a laptop computer to set controls
D. Clean Room Protocol
1. Describe special considerations in computer chip manufacturing environmental systems
2. List protocol for work in the clean room environment

Lab Content

A. Manipulate pneumatic controls to experience characteristics, function and relative adjustments
B. Make drawings of control systems
C. Use computers to adjust digital control systems

Special Facilities and/or Equipment

Laboratory equipped with air conditioning duct and hydronic system.

Method(s) of Evaluation

A. Results of written quizzes and tests
B. Quality of drawings
C. Comprehensive written final examination
D. Maintenance of a workbook of student's daily work activities

Method(s) of Instruction

A. Lecture
B. Discussion
C. Cooperative learning exercises
D. Oral presentations
E. Laboratory
F. Demonstration

Representative Text(s) and Other Materials

International Training Institute for the Sheet Metal and Air Conditioning Industry. Testing, Adjusting & Balancing of Environment Systems. Alexandria, VA: International Training Institute, 2003.

NOTE: This is the standard Sheet Metal textbook/workbook used for this course. Although it may not be within 5 years of the required published date, it is the most current book used when teaching this course.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignment from the textbook:

1. Read assigned unit describing types of automatic control systems

B. Writing assignment from the textbook:

1. Research and provide written answers to the review questions for the assigned text unit on types of automatic control systems

Discipline(s)

Air Conditioning, Refrigeration, Heating