

APRT 143A: AIR BALANCE TEST EQUIPMENT & INSTRUMENTS (FIRST YEAR)

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 explain the operation of testing, adjusting and balancing of HVAC systems.
- A successful student will be able to explain and demonstrate general procedures for use of test and balance instruments.

Description

Development of skills necessary to use test and balance instruments and equipment for HVAC systems and automatic control systems. Use of practical mathematics and mathematical equations to measure air velocity and duct outlets, and to solve air and hydronic balancing problems.

Course Objectives

The student will be able to:

- Explain the operation of testing, adjusting and balancing.
- Explain and demonstrate general procedures for use of test and balance instruments.
- Measure air velocity and duct outlets correctly.

Course Content

- Explain the operation of testing, adjusting and balancing
 - Care and use of air balance testing equipment and instruments
 - Basics of HVAC duct systems
 - Principles of air and fluid flow
 - Fundamentals of electricity
 - Basic air and hydronic balancing problems
- Explain and demonstrate general procedures for use of test and balance instruments
 - Care of instruments
 - Calibration of instruments
 - Selection of best instrument to use from those available
- Measure air velocity and duct outlets correctly

1. Establish measurement locations for accuracy
2. Verify system status
3. Apply appropriate test equipment
4. Complete calculations

Lab Content

- Observe test and balance instruments
- Assembly and application of test and balance instruments

Special Facilities and/or Equipment

Laboratory equipped with air conditioning duct and hydronic system.

Method(s) of Evaluation

- Results of written quizzes and tests
- Satisfactory completion of shop projects
- Comprehensive written final examination
- Maintenance of a workbook of student's daily work activities

Method(s) of Instruction

- Lecture
- Discussion
- Cooperative learning exercises
- Oral presentations
- Laboratory
- Demonstration

Representative Text(s) and Other Materials

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

- Read in the text on basics of an HVAC system
- Complete review questions on this same unit

Discipline(s)

Air Conditioning, Refrigeration, Heating