JRYM 153A: AIR BALANCE TEST EQUIPMENT & INSTRUMENTS FOR JOURNEYPERSONS (FIRST YEAR)

Foothill College Course Outline of Record

Heading	Value
Units:	1.5
Hours:	6 lecture, 48 laboratory per quarter (54 total per quarter)
Prerequisite:	Completion of recognized sheet metal apprenticeship or equivalent and recent employment as a journeyperson in the sheet metal industry.
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 outlet, and to solve air and hydronic balancing problems.

Course Objectives

The student will be able to:
A. Explain the processes of testing, adjusting and balancing HVAC systems.
B. Explain and demonstrate general procedures for use of test and balance instruments.
C. Measure air velocity and duct outlets correctly.

Course Content

A. Test, adjust and balance processes
1. Basics of HVAC duct systems
2. Principles of air and fluid flow
3. Test, adjust and balance processes
B. Use of instruments
1. Care and use of air balance testing equipment and instruments
2. Instrument selection
C. Measuring correctly
1. Basic air and hydronic balancing problems

Lab Content

A. Practicing safe use of tools and equipment
B. Measuring
C. Accuracy in instrument use
D. Adjustments and re-checking

Special Facilities and/or Equipment

A. Laboratory equipped with air conditioning duct and hydronic system.

Method(s) of Evaluation

A. Results of written quizzes and tests
B. Satisfactory completion of shop projects
C. Comprehensive written final examination
D. Maintenance of a workbook of student's daily work activities

Method(s) of Instruction

A. Discussion
B. Laboratory
C. Demonstration

Representative Text(s) and Other Materials

International Training Institute. Testing, Adjusting & Balancing of Environmental Systems. International Training Institute, 2003.

Joint Apprenticeship & Training Committee. HVAC Systems Test and Air Balance. Sheet Metal and Air Conditioning Contractors National Association, Inc., 2010.

NOTE: These are the standard Sheet Metal textbooks/workbooks used for this course. Although one or more may not be within 5 years of the required published date, they are the most current books used when teaching this course.

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

A. Read the following units in the ITI text: General Care of Instruments, and Methods of Airflow Measurements.

B. Prepare a maintenance log indicating the timing of calibrations for the test instruments assigned.

Discipline(s)

Air Conditioning, Refrigeration, Heating