

JRYM 153B: TEMPERATURE MEASUREMENT INSTRUMENTS & DUCT SYSTEMS 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 journeyman 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 correctly complete an air balance report.
- A successful student will be able to identify common fan types used with duct systems.

Description

Continuing study of skills necessary to 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:

- Use air measurement instruments safely and accurately.
- Correctly complete an air balance and hydronic balance report.
- Submit a complete system report to client.

Course Content

- Use instruments
 - Accurate and safe use of temperature measurement instruments
 - Differences between single and dual path duct systems
 - Common fan types used with duct systems
 - Typical pump types used on hydronic applications
- Air and hydronic balance reports
 - Proportional and sequential balance methods

- System reporting
 - Complete written reports on an entire HVAC system

Lab Content

- Practicing safe use of tools and equipment
- Measuring
- Accuracy in instrument use
- Adjustments and re-checking

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

- Discussion
- Laboratory
- Demonstration

Representative Text(s) and Other Materials

Leo A. Meyer Associates, Inc. [Testing, Adjusting & Balancing of Environment Systems](#). Alexandria, VA: National Training Fund, 2009.

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

International Training Institute. [Testing, Adjusting & Balancing of Environmental Systems](#). International Training Institute, 2003.

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

- Read the ITI text unit, Preparation for Balancing and TAB Forms.
- Prepare a written balancing report, as assigned.

Discipline(s)

Air Conditioning, Refrigeration, Heating