

Imperial Valley College
Industrial Technology Division
ACR 104 Air Conditioning Heating System
Fall 2012

Instructor: Frank Miranda

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Office Hours	Monday:	10:30 – 11:30 a.m.
	Tuesday:	10:30 – 11:30 a.m.
	Friday:	8:35 – 9:35 a.m.

BY APPOINTMENT ONLY

Secretary/Division Office: 10

Division Coordinator: Jose Lopez (760) 355-6361 Fax: (760) 355-6552

Credits/Units: 2 Lecture Hours & 3 Lab Hours (3 Units)

CRN: 10367

Semester: Fall 2012, August 20, – December 07, 2012

Breaks/Holidays- No Classes Held

See Attach Schedule

Evenings:	Monday	6:30 p.m.– 8:25 p.m. Lecture
Evenings:	Wednesday	6:30 p.m.– 9:40 p.m. Lab

Location: Room 1101

A. Course Description

This is a course of study in heating, ventilation, air conditioning, and refrigeration trade. This course includes the study of the laws of

thermodynamics, the refrigeration cycle, brazing of refrigerant lines, understanding the use of and maintenance of heating, ventilation, air conditioning, and refrigeration equipment, applicable safety practices, and the proper use of refrigerants.

B. Course Objective

- a. Demonstrate knowledge of safety practices required during the measurements/calculation of HVAC Equipment.
- b. Demonstrate knowledge of the techniques for determining heating and cooling loads.
- c. Demonstrate knowledge of calculators to apply mathematical formulas related to HVAC units.
- d. Demonstrate knowledge of readings, tools and test meter measurements.
- e. Demonstrate knowledge of writing, reading, and changing common numbers to metric systems.
- f. Demonstrate knowledge of volumes, pressures, temperatures, weights, and measurements.
- g. Demonstrate knowledge of using formulas to measure compression ratios and btu's.
- h. Demonstrate knowledge of calculation to estimate service and repair orders.

C. Course Instructional Schedule

Unit 1	Wk. 1	Basics of Airflow
Unit 2	Wk. 2	Calculating Duct Sizes
Unit 3	Wk. 3-4	Air Quantity and Velocity
Unit 4	Wk. 5	Pressures in a Duct
Unit 5	Wk. 6	Airflow in a Duct and Dynamic Losses
	Wk. 7	Mid-Term
Unit 6	Wk. 8,9,10	Sizing Ductwork
Unit 7	Wk. 11-12	Calculating Pressure Losses in Ductwork
Unit 8	Wk. 13-14	Duct Fittings
Unit 9	Wk. 15	Measuring Airflow
	Wk. 16	Final

- Review exam will be given each week on chapter being studied.
- Homework will be review questions at the end of every chapter.
- No extra credit will be assigned
- Homework will be collected weekly

D. Grading Criteria

- a. Tardiness: 3 tardies equal 1 absence (I.V.C. Gen. Catalog pg. 29-30) 2008-2009

b. Absences: (I.V.C. Gen Catalog Pg. 29-30) 2008-2009

Exam and Grading Procedures:

There will be a mid-term and final exam. Each will be worth 25% of the student's final grade. The student will be evaluated on classroom participation and test each week on chapters that have been assigned and/ or covered in class. These classroom assignments will be worth 25% of the student's grade. The remaining 25% of the student's grade will be based on the student's performance in the lab section of the class. All homework and tests must be completed and delivered to the instructor.

3. Grading Systems	Percent of Overall Grade
A= 90%-100%	25% Completed Lab Assignments
B= 80%-89%	25% Completed Classroom Assignments
C=70%-79%	25% Midterm Exam
D=60%-69%	25% Final Exam
F= Less than 60%	

Based on Attendance, Homework, Hands On, Test and Final Exam.

E. Students with Disabilities

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs & Services (DSP&S) office for assistance as soon as possible.

DSP&S
Room 2117
Health Sciences Building
(760) 355-6312

F. Classroom Room Management Procedures

The use of cell phones is prohibited during instruction time,
10 minute breaks allowed at professor discretion,
Tardiness and early departure is loss of credits.
Call-in if absence or tardy 2 hours before class time.
Please pick up after yourself before leaving room (trash cans in room and outside)
Safety rules and other procedures are found in the I.V.C. Gen. Cat. 2008-2009
pgs. 27-28

G. Harassment Statement

All forms of harassment are contrary to basic standards of conduct between individuals and are prohibited by state and federal law, as well as this policy, and

will not be tolerated. The District is committed to providing an academic and work environment that respects the dignity of individuals and groups. The District shall be free of sexual harassment and all forms of sexual intimidation and exploitation.

The District seeks to foster an environment in which all employees and students feel free to report incidents of harassment without fear of retaliation or reprisal. Therefore, the District also strictly prohibits retaliation against any individual for filing a complaint of harassment or for participating in a harassment investigation. Such conduct is illegal and constitutes a violation of this policy.
(I.V.C. General Catalog 2008 – 2009 pg. 22)

H. Resources, Library, Counseling, Parking, etc.

Refer to the I.V.C. Gen. Cat. 2008 -2009 pgs. 19-21

I. Equipment and Supplies

- a. Textbook
Leo A. Meyer: “Airflow in Ducts” Lama Books
ISBN 0-88069-016-X
- b. Personal Protective Equipment
 - 2.1 Safety Glasses
 - 2.2 Leather Gloves
 - 2.3 Ear plugs
 - 2.4 Work footwear
 - 2.5 Proper shirt and pants