LANEY COLLEGE
Environmental Control Technology
Spring Semester -2010

Course: Technical Mathematics for ECT

Course Number/code: ECT 214, 20452

Time: Tuesday, Thursday   5:30 PM – 6:50 PM

Instructor: Hadley Hartshorn

Office: B151   **Units:** 3 units.

Phone: (510) 464-3292

Course Description:

Introduction to the basic concepts of mathematics that are needed for understanding of the technical content of the Environmental Controls curriculum. The course is designed specifically to reinforce practice with real examples of refrigeration and HVAC problems.

Outcomes:

1. Demonstrate the ability to add, subtract, multiply and divide whole numbers, fractions and decimals, and interpret and solve HVAC word problems.
2. Calculate areas and volumes, and to convert measurements between the SI and IP systems.
3. Apply math principles to the solving of typical HVAC problems involving, temperature, pressure, velocity, flow in ducts and pipes and air conditioning loads.
4. Draw, read and interpret graphs, and have experience reading fan curves and pump curves.

Prerequisites: none

Text: "Practical Problems in Mathematics for Heating and Cooling Technicians", *4th Edition*, by Russell DeVore, published by Thomas Delmar Learning

Supplies Needed: Pencils, paper, graph paper and a scientific calculator (optional)

Recommended Tools: none

Topics:

Week	Date	Day	Text Unit	Unit Description
1	1/21/2010	Thursday	-	Pre-Course Assessment

	Date	Day	Problems	Topic
2	1/26/2010	Tuesday	1,2,3,4	Number System/Decimal Arithmetic
	1/28/2010	Thursday	1-4, 11-15	Decimal Arithmetic
3	2/2/2010	Tuesday	5,16	Decimal Arithmetic problems Addition of Common Fractions
	2/4/2010	Thursday	6,7	Subtraction of Common Fractions
4	2/9/2010	Tuesday	8,9	Multiplication of Common Fractions Division of Common Fractions
	2/11/2010	Thursday	10	Practice with Fractions
5	2/16/2010	Tuesday	1-16	Review Problems
	2/18/2010	Thursday	-	-------------------*MID-TERM 1*--------------------
6	2/23/2010	Tuesday	17,18	Midterm Review – Ratio and Proportion
	2/25/2010	Thursday	17,18	Ratio and Proportion
7	3/2/2010	Tuesday	19, 20	Percent, Percentage and Discounts
	3/4/2010	Thursday	21	Equivalent Units of Temperature Measure
8	3/9/2010	Tuesday	23,24,25	Linear Measurement
	3/11/2010	Thursday	26,27	Area Measure
9	3/16/2010	Tuesday	28,29	Volumetric Measure
	3/18/2010	Thursday	30	Ohms Law and Electrical Relationships
10	3/23/2010	Tuesday	31	Gas Laws
	3/25/2010	Thursday	-	---------------------- *NO CLASS* ------------------
11	3/30/2010	Tuesday	31	Gas Laws
	4/1/2010	Thursday	-	Flow in Ducts and Pipes
12	4/6/2010	Tuesday	-	---------------------- *NO CLASS* ------------------
	4/8/2010	Thursday	-	---------------------- *NO CLASS* ------------------
13	4/13/2010	Tuesday	16 to 31	Practice Problems
	4/15/2010	Thursday	16 to 31	-------------------*MID-TERM 2*----------------------
14	4/20/2010	Tuesday	-	Midterm Review - Flow in Ducts and Pipes
	4/22/2010	Thursday	32	Heat Load Calculations
15	4/27/2010	Tuesday	32	Heat Load Calculations
	4/29/2010	Thursday	22,26	Angular Measurement
16	5/4/2010	Tuesday	36	Trigonometric Functions
	5/6/2010	Thursday	36	Trigonometric Functions
17	5/11/2010	Tuesday	37	Graphs and Graphing

	5/12/2010	Thursday	-	Spreadsheets/Data logging
18	5/18/2010	Tuesday	38	Estimates and Bills
	5/20/2010	Thursday	ALL	Course Review
19	5/25/2010	Tuesday	ALL	----------------FINAL EXAM----------------------

Evaluation: Grades for the class will be assigned in accordance with the number of points earned for various class activities. The maximum number of points for each activity will be assigned as indicated below.

1. Class Attendance and Participation   30 points
2. Midterm Assessment #1   20 points
3. Midterm Assessment #2   20 points
4. Final Exam   30 points

Total: 100 points

Safety: Students are expected to observe safety practices typical for a classroom environment

Attendance: Students may be dropped from the course if the number of absences exceeds four weeks worth of class meetings. However, extenuating circumstances may warrant consideration.

Note: Cellular phone use is not allowed in class.