

**LANEY COLLEGE**  
**Environmental Control Technology**  
Spring Semester -2010

**Course:** HVAC System Design

**Course Number/code:** ECT 23, 21511

**Time:** Tuesday 7:00 PM – 8:50 PM

**Instructor:** Hadley Hartshorn

**Office:** B151

**Units:** 2 units.

**Phone:** (510) 464-3292

**Course Description:**

Introduction to concepts and principles for the design of commercial HVAC systems and system controls: All-air systems, all-water systems, and air-water systems.

**Outcomes:**

1. Develop an understanding of the kinds of information that are needed to select, size and specify an HVAC system
2. Develop an understanding of the types of HVAC systems that are typically used to meet various design requirements
3. Develop an understanding of the issues, standards and codes that affect the HVAC design process
4. Gain some experience with the HVAC design process by completing a design in a problem based exercise

**Prerequisites:** none

**Text:** “Air Conditioning System Design Manual”, Walter Grondznik - Editor ,  
ASHRAE/Butterworth-Heinemann

**Supplies Needed:** Pencils, paper

**Recommended Tools:** none

**Topics:**

<u>Week</u>	<u>Date</u>	<u>Day</u>	<u>Text Unit</u>	<u>Unit Description</u>
1	1/21/2010	Thursday	-	Design Example Review
2	1/28/2010	Thursday	2	The Design Process

3	2/2/2010	Tuesday	3	Occupant Comfort and Health
4	2/9/2010	Tuesday	4	Load Calculations
5	2/16/2010	Tuesday	5	Components
6	2/23/2010	Tuesday	-	Problem Based Exercise Intro/Discussion
7	3/2/2010	Thursday	6	All Air Systems
8	3/9/2010	Tuesday	7	Air and Water Systems
9	3/16/2010	Tuesday	1-8	-----MID-TERM -----
10	3/23/2010	Tuesday	-	----- NO CLASS -----
11	3/30/2010	Tuesday	8	All Water Systems
12	4/6/2010	Tuesday	-	----- NO CLASS -----
13	4/13/2010	Tuesday	9	System Selection/Special Systems
14	4/20/2010	Tuesday	-	Residential/Light Commercial HVAC
15	4/27/2010	Tuesday	-	Duct Design
16	5/4/2010	Tuesday	-	HVAC&R Controls
17	5/11/2010	Tuesday	10	Problem Based Exercise Review
18	5/18/2010	Tuesday	-	Course Review
19	5/25/2010	Tuesday	1 - 10	----- 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. Problem Based Exercise             | 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.