Air conditioning and Refrigeration Codes (HART 2301)

Credit: 4 semester credit hours (2 hours lecture, 6 hours lab)

Prerequisite/Co-requisite: HART 1407

Course Description
HVAC standards and concepts with emphasis on the understanding, an documentation of the codes and regulations required for the state mechanical contractors license and local codes.

Required Textbook and Materials
   a. ISBN number is 10: 1-111-03874-0
2. Modern Refrigeration and Air Conditioning by Althouse, Turnquist, and Bracciano 20th edition
   a. ISBN number is 978-1-63126-354-5

Course Objectives
Upon completion of this course, the student will be able to:

1. Demonstrate the ability to locate and identify information in code books.
2. Demonstrate the ability to locate reference materials applicable to installation procedures governed by Texas Air Conditioning and Refrigeration Contractors License.

Course Outline
A. Introduction
   1. Introduction of faculty and students
   2. Review Syllabus
   3. Review Class Policies
   4. Review Lab Assignments
B. Code Types
   1. Electrical
   2. Mechanical
   3. Building
C. Electrical Codes
   1. Wire Sizing/Length
   2. Wire Protection
   3. Circuit Loads
D. Gas Appliances
   1. Clearance
   2. Leak Testing
   3. Pressures
E. Ventilation
   1. Exhaust
   2. Combustible Air
   3. Fresh Air
F. Piping
   1. Type
   2. Size
   3. Lengths
   4. Valves
   5. Pressure
   6. Testing
G. Plumbing
   1. Size
   2. Insulation
   3. Traps
Grade Scale
A = 90 - 100
B = 80 - 89
C = 70 - 79
D = 60 - 69
F = 0 - 59

Course Evaluation
1. Objective Tests 25%
2. Lab Projects/Test 25%
3. Comprehensive Final 25%
4. Homework 25%

Course Requirements
1. Homework assignments
2. Hands on lab activities
3. Complete comprehensive final

Course Policies
1. There will be no horseplay tolerated.
2. No open foot shoes, sandals, or flip-flops: closed foot shoes only.
3. No smoking, eating, or sleeping will be tolerated during class.
4. If an assignment is late, there will be 5 points deducted per day.
5. No hanging jewelry or rings in lab.

Disabilities Statement
The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:

http://www.lit.edu/depts/stuserv/special/defaults.aspx
Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the LIT Catalog and Student Handbook. The LIT Catalog and Student Handbook may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office.

Course Schedule

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<th>Week</th>
<th>Topic</th>
<th>Reference</th>
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<td>1</td>
<td>Introduction &amp; Safety Orientation</td>
<td>Lecturer Notes</td>
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<td>2</td>
<td>Identifying Building, Electrical &amp; Mechanical Code Purpose</td>
<td>Lecturer Notes &amp; Guest Speaker</td>
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<td>3</td>
<td>Introduction to the Table of Contents for the International Residential Code Book</td>
<td>IRC Book</td>
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<td>4</td>
<td>Identifying Electrical Code Standards for HVAC Electrical Systems</td>
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<td>Inspecting Electrical Code Standards for HVAC Electrical Systems</td>
<td>IRC Book &amp; Lab Procedure</td>
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<td>Identifying Gas Appliances Code Standards</td>
<td>IRC Book</td>
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<td>7</td>
<td>Inspecting Gas Appliances Code Standards</td>
<td>IRC Book &amp; Lab Procedure</td>
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<td>Identifying Ventilation Code Standards</td>
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<td>Inspecting Ventilation Code Standards</td>
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<td>Identifying Fuel Piping Code Standards for HVAC Systems</td>
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<td>11</td>
<td>Inspecting Fuel Piping Code Standards for HVAC Systems</td>
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<td>Identifying Plumbing Code Standards for HVAC Systems</td>
<td>IRC Book</td>
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<td>13</td>
<td>Inspecting Plumbing Code Standards for HVAC Systems</td>
<td>IRC Book &amp; Lab Procedure</td>
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<td>14</td>
<td>Introduction to the Code Check Complete Quick Reference Book</td>
<td>CCC ref. Book</td>
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<td>15</td>
<td>Review for Final Exam</td>
<td>Lecturer Notes</td>
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<td>16</td>
<td>Final Exam</td>
<td>Review previous materials</td>
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