

Air conditioning and Refrigeration Codes (HART 2301)



Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: HART 1407

Course Description

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

Required Textbook and Materials

1. Electricity for Refrigeration, Heating and Air Conditioning by Russell E. Smith, 9th edition.
 - a. ISBN number is 10: 1-285-17998-6
2. Modern Refrigeration and Air Conditioning by Althouse, Turnquist, and Bracciano 19th edition
 - a. ISBN number is 978-1-61960-199-4

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

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|---|--------------------|
| A. Introduction | 2. Leak Testing |
| 1. Introduction of faculty and students | 3. Pressures |
| 2. Review Syllabus | 4. Venting |
| 3. Review Class Policies | 5. Plumbing |
| 4. Review Lab Assignments | E. Ventilation |
| B. Code Types | 1. Exhaust |
| 1. Electrical | 2. Combustible Air |
| 2. Mechanical | 3. Fresh Air |
| 3. Building | F. Piping |
| C. Electrical Codes | 1. Type |
| 1. Wire Sizing/Length | 2. Size |
| 2. Wire Protection | 3. Lengths |
| 3. Circuit Loads | 4. Valves |
| D. Gas Appliances | 5. Pressure |
| 1. Clearance | 6. Testing |
| | G. Plumbing |

HART 2401
Course Syllabus

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

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|------------------------|-----|
| 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 office in Student Services, Cecil Beeson Building.

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

HART 2401
Course Syllabus

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. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

Course Schedule

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

Contact Information:

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