

# LAREDO COMMUNITY COLLEGE GENERAL COURSE SYLLABUS

INSTRUCTOR:	<b>Jesus J. Zamora</b>
DEPARTMENT:	<b>Industrial Technology – Heating, Air Conditioning, &amp; Refrigeration</b>
PHONE NUMBER/EXTENSION and EMAIL ADDRESS:	<b>(956) 721-5495</b>
OFFICE LOCATION: OFFICE HOURS:	<b>Please refer to instructor’s office schedule posted outside his office door.</b>
COURSE TITLE:	<b>Residential Air Conditioning Systems Design</b>
COURSE NUMBER:	<b>HART 2445</b>
COURSE LEVEL:	<b>Advanced</b>
CONTACT HOURS (RANGE FOR STATE INFORMATION):	<b>112 hrs.</b>
LAB:	<b>Required</b> <b>*Note: Hand tools are required for this course.</b> <b>Instructor will provide list of hand tools to students.</b>
TEXTBOOKS:	<b>Refrigeration Air Conditioning Systems Design – 6th Edition</b> <b>Include ISBN #1428319360</b>
CORE or NON-CORE Course:	<b>Core Course</b>
COURSE DESCRIPTION:	Study of the properties of air and results in cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system.
END-OF-COURSE OUTCOMES:	<p><b>Upon completion of this course, the student should be able to:</b></p> <ol style="list-style-type: none"> <li><b>1. Identify common fasteners with sheet metal.</b></li> <li>2. Describe a fastener used in masonry.</li> <li>3. Describe hanging devices for piping, tubing, and duct.</li> <li>4. Describe the control sequence for air-conditioning.</li> <li><b>5. Identify operating and safety controls.</b></li> <li>6. Recognize the various types and designs of evaporators used in the air conditioning and refrigeration system.</li> <li>7. Understand the basic functions of direct expansion coiling coils.</li> <li><b>8. Apply and adjust the refrigerant control devices.</b></li> <li>9. Explain the function of all types of temperature and/or pressure actuated refrigerant control devices.</li> <li>10. Properly pipe a refrigeration system.</li> <li>11. Recognize common problems in refrigeration, piping, and make connections for proper operation.</li> </ol> <p>Chapters: 6 &amp; 39</p>
COURSE OBJECTIVES OR EXEMPLARY OBJECTIVES:	<b>Pre-requisites: HART 1407, HART 1401, HART 1441, &amp; HART 2431</b>

SCANS COMPETENCIES:	<b>Refer to attachment</b>
SCANS ASSESSMENT:	<b>C1, C5, C10, C11, C13, C16, C17, C18, C19, &amp; C20</b>
TEACHING STRATEGIES METHODS OF INSTRUCTION:	<b>Instructor’s lectures, overhead projector, material shown thru DVD’s, oral presentations by students, and drawing diagrams on board.</b>
OUTCOMES ASSESSMENT:	<b>Assignments, unit exams, quizzes, and a final written examination will be given to evaluate student retention of the material covered.</b>
METHODS AND CRITERIA FOR EVALUATION:	<p><b>Grade determination will be based on the following:</b></p> <p><b>Class Assignment/Test Average 40%</b>  <b>Class Final Exam.....20%</b>  <b>Lab..... 40%</b>  <b>.....100%</b></p>
GRADING SCALE:	<p>A = 100-90%  B = 89-80%  C = 79-70%  D = 69-60%  F= 59% or below  NC= No credit (for developmental courses)  P = Pass  NP = No Pass  AU = Audit</p> <p>Students must access the Semester Progress Report and Final grades through PasPort (<a href="http://passport.laredo.edu">http://passport.laredo.edu</a>).</p> <p>Instructors will notify students of the window of availability for grades.</p>
ATTENDANCE REGULATIONS:	<p><b>ATTENDANCE REGULATIONS</b></p> <p>Attendance will be taken up until the official census date, which is the first 11 class days during the fall and spring semester, and for the first three days during the summer sessions. Students who attend at least one day of class leading up to the census date will be officially enrolled in the course, and faculty members will drop any students who have not attended at least one class day. Once the official census date for the semester or session has passed, no formal attendance will be required except for programs where the respective accreditation agency requires attendance records.</p> <p>Students who do not intend to remain enrolled after attending at least one class day <b>must</b> initiate a drop</p>

request from any or all classes by submitting a drop slip to the Enrollment and Registration Center or through PASPort. **Responsibility for class attendance rests with the student. Regular and punctual attendance is expected.**

It is advised that a student contact Financial Aid Center at (956) 721-5361 prior to dropping a course.

**Absence From Final Examinations:**

A student who is absent from a final examination receives a grade of "0" for the examination and a grade of "F" for the course. Any students authorized to be absent from a final examination receive a grade of F\* on their transcript until they take the final examination. Such students must take the final exam within four months. Final exams cannot be re-taken.

**Other Policies (LCC and State-Wide):**

A. **3-peat**—If a student signs up for a class for a third time, even if he/she dropped or failed it before, the State will not provide funding for that student and the student will be required to pay an additional fee.

B. **6 W's**—Beginning Fall 2007, students cannot drop more than 6 classes throughout their college career. Any subsequent drops will become F's. The rule includes credits earned at all Texas colleges/universities, and W's will carry over when transferring to other institutions.

C. **Finishing on time**—The State expects students to graduate on time. Students who obtain 90 or more credit hours at a Community College are no longer eligible for financial aid.

**D. Bacterial Meningitis Vaccination Requirement effective Spring 2012.**

- Per Texas State Law (SB 1107), students who meet the criteria below, must provide proper documentation that they have received the bacterial meningitis vaccination within the last five years and at least 10 calendar days before the beginning of the semester.
- All new or transfer students under age 30.
- All returning students under the age of 30, who have experienced a break in enrollment of at least one fall or spring term.
- Students enrolled in online courses that physically attend classes or come to campus within the semester.

<p>SPECIAL SERVICES CENTER:</p>	<p>A student with disabilities, including learning disabilities, who wishes to request special accommodations in this class should notify the Special Services Center. The request should be made early in the semester so that appropriate arrangements may be made. In accordance with Federal Law, a student requesting accommodations must provide documentation of his/her disability to the Special Services Counselor. For additional information, visit the Special Services Center at:</p> <ul style="list-style-type: none"> <li>• Fort McIntosh Campus - KCC Room 213 or call 721-5137.</li> <li>• South Campus – Billy Hall Student Center Room 121 or call 794-4137.</li> </ul> <p>The student who needs note-taking and/or test-taking accommodations must notify the faculty member prior to the first exam.</p> <p>A pregnant student is required to meet all course/program outcomes, including attendance.</p> <p>There may be contaminants present in clinical area(s) that could adversely affect a fetus. It is advisable for the student to contact her obstetrician, once pregnancy has been confirmed, to ensure that there are no medical concerns/limitations to continuing their courses.</p>
<p>GRADE APPEAL:</p>	<p>A student who wishes to question the final grade earned in a course or class activity should first discuss the situation with the instructor who issued the grade. If the issue is not resolved, the student should contact the appropriate Department Chairperson to request a review of the grade.</p> <p>If the student is not satisfied with the Department Chairperson’s decision, the student may contact the appropriate Dean of Instruction for assistance related to the grade appeal. Established departmental procedures will be utilized to resolve student grade appeals. After all other avenues have been exhausted, the student may request a review of the grade by the Vice-President for Instruction. Student grades are an academic matter; therefore, there is no further appeal beyond the Office of the Vice-President for Instruction.</p> <p>Students have two weeks (10 working days) after a final course grade is issued to appeal it. Students have one week (five working days) after an activity grade is issued</p>

	<p>to appeal it. Exceptions require the approval of the Vice-President for Instruction.</p>
<p>CLASSROOM ETIQUETTE:</p>	<p style="text-align: center;"><b>Code of Student Conduct &amp; Discipline</b></p> <p>Each student is expected to be fully acquainted with all published policies, rules, and regulations of the college, copies of which shall be available to each student for review at the Office of Dean of Student Affairs. Laredo Community College will hold each student responsible for compliance with these policies, rules, and regulations. The student is responsible for obtaining published materials to update the items in this Code. Students are also expected to comply with all federal, state, and local laws. This principle extends to conduct off campus which is likely to have an adverse effect on Laredo Community College or on the educational process.</p> <p style="text-align: center;"><b>Student Misconduct</b></p> <p>Each student is expected to conduct him/herself in a manner consistent with the college's functions as an educational institution. Specific examples of misconduct and the disciplinary process is located at <a href="http://www.laredo.edu">www.laredo.edu</a> (go to Student Information, then Student Handbook).</p> <p style="text-align: center;"><b>Use of Personal Electronic Devices</b></p> <p>The use of an electronic device shall not interfere with the instructional, administrative, student activities, public service, and other authorized activities on College District premises. Unless prior authorization is obtained from the instructor or respective College District official, the use of an electronic device is expressly prohibited in classrooms, laboratories, clinical settings, and designated quiet areas on College District premises. Certain violations of this policy may be excused in the case of emergencies or other extenuating circumstances provided that prior approval is obtained from the instructor or respective College District official.</p> <p>The use of electronic equipment capable of capturing still or moving images in any location where individuals may reasonably expect a right to privacy is not authorized on College District premises. Noncompliance with these provisions shall be considered a violation of Board adopted policy and shall warrant appropriate disciplinary action.</p>

### **Academic Dishonesty**

The College expects all students to engage in all academic pursuits in a manner that is beyond reproach. Students will be expected to maintain complete honesty and integrity in their experiences in the classroom. Any student found guilty of dishonesty in their academic work is subject to disciplinary action.

(1) The College and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, the following:

A. **Scholastic dishonesty** includes, but is not limited to, cheating on academic work, plagiarism, and collusion.

B. **Cheating on academic work includes:**

a. Copying from another student's test paper or other academic work.

b. Using, during a test, materials not authorized by the person giving the test.

c. Collaborating, without authority, with another student during an examination or in preparing academic work.

d. Knowingly using, buying, selling, stealing, transporting, or soliciting, in whole or part, the contents of an unadministered test.

e. Substitution for another student, or permitting another student to substitute for oneself, to take a test or prepare other academic work.

f. Bribing another person to obtain an unadministered test or information about an unadministered test.

C. **Plagiarism** means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

D. **Collusion** means the unauthorized collaboration with another person in preparing written work offered for credit.

(2) Procedures for discipline due to academic dishonesty shall be the same as in student disciplinary actions, except that all academic dishonesty actions shall be first considered and reviewed by the faculty member. If the student does not accept the decision of the faculty member, he/she may appeal the decision to the appropriate Department Chairperson, Dean of Instruction, or the Vice President for Instruction. If the student does not accept the decision of the appropriate Department Chairperson, Dean of Instruction, or the Vice

	<p>President for Instruction, the student may then follow the normal disciplinary appeal procedures for a review of the decision.</p> <p><b>For additional information please refer to the: Student Policies - LCC Policy Manual</b></p> <p>The LCC Policy Manual is available online and includes all Federal, State, and Local Policies applicable to the college. Students may access the LCC Policy Manual through LCC's Web Page (<a href="http://www.laredo.edu">www.laredo.edu</a>) - Homepage, select-Campus Information, select - Manual of Policy.</p>
<p>EMERGENCY PROCEDURES:</p>	<p><b><u>LCC Alert System:</u></b> Safety and security for LCC is paramount. When an emergency arises, LCC will provide students with information as rapidly and as efficiently as possible. Students must register for the LCC Alert system at <a href="http://www.laredo.edu/lccalert">www.laredo.edu/lccalert</a>.</p> <p><b><u>Fire:</u></b> Upon activation of the alarm, you will quietly and calmly exit the building from the nearest exit. Once everyone has gathered, at a predetermined or arranged site, a roll call shall be taken to ensure everyone is out of the building. If the building is on fire, no one should be near it to allow firefighting equipment and emergency vehicles to access the building. Additionally, the building(s) may have chemicals, paints, or aerosol cans may have explosions that could be dangerous to anyone near the building.</p> <p>No one should re-enter the building until an "All Clear" has been given. The "All Clear" shall be determined by a senior campus official in cooperation with the incident commander from the responding agency.</p> <p>PLEASE NOTE: The Science buildings do contain several types of biological and chemical agents. Some of these agents are stored in large quantities, while some are considered dangerous to human health through contact to skin or if fumes are inhaled. The building signage should be placed to warn responding emergency personnel if they should put on SCBA or wear "HAZ-MAT" suits in lieu of or over turnout gear.</p> <p><b><u>Injury, Person Down, Illness, Stalking or Theft:</u></b> Call the Campus Police (Main 721-5303; South 794-4303 or 111 Emergency) and/or the campus nurse (Main 721-5189; South 794-4189) to alert emergency</p>

	<p>personnel. Give the location of the person and briefly describe the person's condition. If the person is not breathing or does not have a pulse, call 9-911 to alert the City of Laredo emergency services.</p> <p>For serious injury, illness, heart attack etc., call 111 from any Campus phone or 911 from your personal cell phone. A back up call should be made to the Campus Police and the Campus Nurse. They may be able to arrive on the scene quicker than the EMT's and City police. When placing an emergency call, be sure to give instructions to the nearest entrance to the building, thus saving time for emergency personnel.</p> <p><b><u>Assault:</u></b> Call the Campus Police (Main 721-5303; South 794-4303 or 111 Emergency) and 9-911 to alert the City of Laredo emergency services. For any possible threats to life or property from criminal acts call Campus Police. Please remember that after hours they operate on a limited staff basis.</p>
DISCLAIMER:	<p>Every attempt has been made to make the contents of this syllabus informative and accurate. Content of the syllabus is subject to revision and change in the event of extenuating circumstances. Changes will be distributed to you in writing.</p>

**The updated official version of the LCC Catalog is the on-line catalog and can be found at [www.laredo.edu](http://www.laredo.edu).**



## COURSE SCHEDULE

Date Week	Brief Description of Topic	Assignments/Examinations/ Activities with Brief Description	Chapters/Reading

\*Schedule is subject to change

LAREDO COMMUNITY COLLEGE

COURSE SYLLABUS

STUDENT ACKNOWLEDGEMENT

**I have read and understand the information and requirements of the syllabus for**

\_\_\_\_\_  
**Course & Number**

\_\_\_\_\_  
**Student Name**

\_\_\_\_\_  
**Palomino ID**

\_\_\_\_\_  
**Date**

**Admission into and/or graduation from the program does not guarantee employment, any particular salary level, and/or passage on any licensure examinations.**

Student Signature \_\_\_\_\_

Faculty Name \_\_\_\_\_

## SCANS COMPETENCIES

## ENCLOSURE

*The Secretary's Commission on Achieving Necessary Skills (SCANS) has identified foundation skills and workplace competencies for students. Foundation Skills are defined in three areas: basic skills, thinking skills, and personal qualities. Basic Skills includes Reading, Writing, Arithmetic and Mathematical Operations, Listening, and Speaking effectively. Thinking Skills include a worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. Personal Qualities include a worker must display responsibility, self esteem, sociability, self management, integrity, and honest. Work Place Competencies include resources, interpersonal skills, information, systems, and technology.*

### Resources.

- C1. **Allocates Time:** Selects relevant, goal-related activities, ranks them in order of importance, allocates time to activities, and understands, prepares, and follows schedules.
- C2. **Allocates Money:** Uses or prepares budgets, including making cost and revenue forecasts, keeps detailed records to track budget performance, and makes appropriate adjustments.
- C3. **Allocates Material and Facility Resources:** Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.
- C4. **Allocates Human Resources:** Assesses knowledge and skills and distributes work accordingly, evaluates performance, and provides feedback.

### Interpersonal

- C5. **Participates as a member of a team:** Works cooperatively with others and contributes to group with ideas, suggestions, and effort.
- C6. **Teach Others New Skills:** Helps others to learn.
- C7. **Serves Clients/Customers:** Works and communicates with clients and customers to satisfy their expectations.
- C8. **Exercises Leadership:** Communicates thoughts, feelings, and ideas to justify a position, encourages, persuades, convinces, or otherwise motivates an individual or groups: including responsibly challenging existing procedures, policies, or authority.
- C9. **Negotiates to Arrive at a Decision:** Works toward an agreement that may involve exchanging specific resources or resolving divergent interests.
- C10. **Works with Cultural Diversity:** Works well with men and women and with a variety of ethnic, social, or educational backgrounds.

### Information

- C11. **Acquires and Evaluates Information:** Identifies need for data, obtains it from existing sources or creates it, and evaluates its relevance and accuracy.
- C12. **Organizes and Maintains Information:** Organizes, processes, and maintains written or computerized reports and other forms of information in a systematic fashion.
- C13. **Interprets and Communicates Information:** Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multi-media methods.
- C14. **Uses Computers to Process Information:** Employs computers to acquire, organize, analyze, and communicate information.

### Systems

- C15. **Understands Systems:** Knows how social, organizational, and technological systems work and operates effectively within them.
- C16. **Monitors and Corrects Performance:** Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system/organization, and takes necessary action to correct performance.
- C17. **Improves and Designs Systems:** Makes suggestions to modify existing systems to improve products or services, and develops new or alternative systems.

### Technology

- C18. **Selects Technology:** Judges which set of procedures, tools, or machines, including computers and their programs will produce the desired results.
- C19. **Applies Technology to Task:** Understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems.
- C20. **Maintains and Troubleshoots Technology:** Prevents, identifies, or solves problems in machines, computers, and other technologies.