

LAREDO COMMUNITY COLLEGE GENERAL COURSE SYLLABUS

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

EXAMPLARY OBJECTIVES	1441, & HART 2431
SCANS COMPETENCIES	Refer to attachment
SCANS ASSESSMENT	C1, C5, C10, C11, C13, C16, C17, C18, C19, & C20
TEACHING STRATEGIES METHODS OF INSTRUCTION:	Instructor's lectures, overhead projector, material shown thru DVD's, oral presentations by students, and drawing diagrams on board.
OUTCOMES ASSESSMENT:	Assignments, unit exams, quizzes, and a final written examination will be given to evaluate student retention of the material covered.
METHODS AND CRITERIA FOR EVALUATION:	Grade determination will be based on the following: Class Assignment/Test Average 40% Class Final Exam.....20% Lab..... 40%100%
GRADING SCALE:	A = 100-90% B = 89-80% C = 79-70% D = 69-60% The Semester Progress Report will be available on Passport (http://passport.laredo.edu) The instructor will notify you when the grade will be available and for how long. Students must access the Semester Progress Report and Final grades through Passport http://passport.laredo.edu
ATTENDANCE REGULATIONS	ATTENDANCE REGULATIONS Attendance: Students are required to attend classes to remain enrolled. Students will be dropped from the class roster by the instructor according to College Attendance Regulations; however, a student may be reinstated by the Vice-President of Instruction and Student Development upon the recommendation of the instructor(s) and an agreement from the student to make up all of the missed assignments, lab times and/or tests. Students have the right to initiate a drop request from any or all classes by informing the instructor and submitting a drop slip to the Admissions/Registration Office. <u>Regular Semester</u> During a regular semester, students will be dropped after being absent: 1. For six consecutive lecture hours on Monday-Wednesday-Friday schedule; or 2. Twice in a three-hour class that meets once a week; or 3. For four consecutive lecture hours on Tuesday-

Thursday or Monday-Wednesday schedule.

4. For 20 percent of the total class time.

A grade of "W" will be given through the Friday of the twelfth week of the semester for all drops initiated by the instructor or by the student. After the Friday of the twelfth week of the semester, a grade of "F" will be given. Exceptions require the approval of the Vice-President of Instruction.

Summer Courses:

During a summer session, students will be dropped after being absent for the following consecutive days:

1. For four periods on a Monday through Friday schedule; or
2. For two periods on a Tuesday, Wednesday, Thursday schedule; or
3. For three periods on a Monday through Thursday schedule; or
4. For two periods on a Monday, Tuesday, Wednesday schedule; or
5. For two periods on a Monday-Wednesday schedule.
6. For 20 percent of the total class time.

A grade of "W" will be given through the Friday of the fourth week of the summer session for all drops initiated by the instructor or by the student. After the Friday of the fourth week of the summer session, a grade of "F" will be given. Exceptions require the approval of the Vice President of Instruction.

Responsibility for class attendance rests with the student. Regular and punctual attendance is expected.

Instructors must drop students according to the College's attendance policy in a timely manner in order to comply with the requirements of external funding agencies. The last day that the student attended the class must be included in the drop slip. It is the student's responsibility to ensure that drop slips be completed and processed whether it is student-requested or faculty-initiated.

Online Student Attendance Guidelines

Responsibility for class attendance rests with the student. LCC Holidays will not be factored in as part of the student's attendance requirements.

Students are required to log in and participate in their respective online classes to remain enrolled. Students will be dropped from the class roster by the instructor according to College Attendance Regulations; however, a student may be reinstated by the Vice-President of Instruction upon the recommendation of the instructor(s) and an agreement from the student to make up all of the missed assignments, lab times and/or tests.

Students will be dropped after being absent:

During a regular semester:

1. Students will be dropped with a "W" for failure to log-in to the course for 14 consecutive days.
2. A "W" will be given through the Friday of the twelfth week of the semester for all drops initiated by the instructor or by the student.
3. After the Friday of the twelfth week of the semester, a grade of "F" will be given.
4. The instructor will drop an online student if he or she has never logged-in to their course prior to certifying the rolls on the 12th Class Day.

During a summer session:

1. Students will be dropped with a "W" for failure to log-in to the course for 7 consecutive days.
2. A grade of "W" will be given through the Thursday of the fourth week of the summer session for all drops initiated by the instructor or by the student.
3. After the official drop date of the fourth week of the summer session, a grade of "F" will be given.
4. The instructor will drop an online student if he or she has never logged-in to their course prior to certifying the rolls on the 4th Class Day.

Flex Entry Courses (8 week):

1. Students will be dropped with a "W" for failure to log-in to the course for 7 consecutive days.
2. A grade of "W" will be given through the sixth week for the Flex Entry Course for all drops initiated by the instructor or by the student.
3. After the official drop date of the sixth week for the Flex Entry Course, a grade of "F" will be given.
4. The instructor will drop an online student if he or she has never logged-in to their course prior to certifying the rolls on the 6th Class Day.

Absence From Final Examinations:

	<p>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. 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. A fee of \$5.00 must be paid by the student for taking a final examination other than at the scheduled time, regardless of the reason for absence. Only students with an approved absence may exercise this privilege. Final examinations cannot be re-taken.</p>
<p>SPECIAL SERVICES CENTER</p>	<p>The student with disabilities, including learning disabilities, that 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 the 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"> • Fort Macintosh Campus - KCC room 213 or call 721-5137. • South Campus – Billy Hall Building A Room 121 or call 794-4137 <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. As a point of information, the pregnant student is reminded of the many contaminants present in the clinical area(s) that could adversely affect the fetus. It is advisable for the student to contact her obstetrician, once the pregnancy has been confirmed, to ensure that there are no medical concerns/limitations.</p>
<p>GRADE APPEAL</p>	<p>A student who wishes to question the final grade earned in a course or a grade earned in a class activity should first discuss the situation with the instructor of record 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. 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 questions. If necessary, the student may request a review by the Vice-</p>

	<p>President for Instruction after all other avenues have been exhausted for the review of the grade. Student grades are an academic matter; therefore, there is no further appeal beyond the Office of the Vice-President for Instruction.</p> <p>Students, who think that the final course grade is unfair, have two weeks (10 working days) after the grade is issued to appeal the grade. Students who think that a grade earned in a class activity is unfair have one week (five working days) after the grades are issued to appeal the grade. Exceptions require the approval of the Vice-President for Instruction.</p>
<p>CLASSROOM ETIQUETTE:</p>	<p style="text-align: center;">Code of Student Conduct & Discipline</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;">Student Misconduct</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 www.laredo.edu (go to Student Information, then Student Handbook).</p> <p style="text-align: center;">Use of Personal Electronic Devices</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>

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.

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

	<p>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 and Student Development. If the student does not accept the decision of the appropriate Department Chairperson, Dean of Instruction, or the Vice President for Instruction and Student Development, the student may then follow the normal disciplinary appeal procedures for a review of the decision.</p> <p>For additional information please refer to the: Student Policies - LCC Policy Manual 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 (www.laredo.edu) - Homepage, select-Campus Information, select - Manual of Policy.</p>
EMERGENCY PROCEDURES	<p>Fire: 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, building that 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 in large quantities, while some are considered dangerous to human health through contact to skin, if fumes are inhaled, etc. The buildings should be placed to warn responding emergency personnel if they should put on SCBA or wear “HAZ-MAT” mat suits in lieu of or over turnout gear.</p> <p><u>Injury, Person Down, Illness, Stalking or Theft:</u> 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 personnel. Give the location of the person and briefly</p>

	<p>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 to 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. Reminder to give instructions to the nearest entrance to your campus building, thus saving time for emergency personnel.</p> <p><u>Assault:</u> 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 will be the on-line catalog and can be found at www.laredo.edu.

SCANS COMPETENCIES

ENCLOSURE

The Secretary's Commission on Achieving Necessary Skills (SCANS) has identified Reading, Writing, Arithmetic or Mathematics, Speaking and Listening, Thinking Skills, Personal Qualities, Work Place Competencies, and Basic Use of Computers as competencies required to enter employment.

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. **Teaches Others:** 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.

¹Students must possess the reading, writing, and math skills necessary to enter the curriculum. They should consult with the Program Advisor for Entry Level Requirements.

²In order to graduate with a 2 year certificate student must meet the Basics Skills Pre-requisites for this program.