

**Eastfield College**  
**HART 2438. 43501**  
**AIR CONDITIONING INSTALLATION AND STARTUP**  
**Spring Semester 2019**  
**Career Technologies**

**Class:** HART 2438  
**Time:** 5:45pm to 10:45pm, Monday Nights  
**Instructor:** Richard McDonald  
**Phone:** 214-537-7548  
**E-mail:** powerman417@sbcglobal.net  
**Division office:** 972-860-7143

**TEXTBOOK:**

Refrigeration and Air Conditioning Technology; 8th Edition  
by Whitman, Johnson and Tomczyk. Delmar Publishing

**COURSE DESCRIPTION:**

A study of heating and air conditioning systems installation, refrigerant piping, condensate disposal, and air cleaning equipment with emphasis on start up and performance testing..  
(3 hr Lecture, 3 hr Lab., 4 Credit hr.)

**LEARNING OUTCOMES:**

The HVAC industry is in need of skilled, trained technicians who are can install heating and air conditioning equipment to the National Mechanical Code and local Building codes. The student will demonstrate knowledge of the National Mechanical code and industry accepted practices in the installation of heating and air conditioning equipment, as well as evaluation of system performance

**PREREQUISITES:** None

**MODULES;**

1. Safety and tools and equipment
2. Soldering and Brazing techniques
3. Gas pipe installation and gas piping requirements
4. Installation of indoor and outdoor sections
5. Indoor Air Quality
6. Typical Operating Conditions
7. Troubleshooting

## STUDENT LEARNING OUTCOMES:

1. Measure liquid line subcooling
2. Measure suction line superheat
3. Perform temperature pressure conversions
4. Solve refrigerant problems
5. Correctly install gas furnace
6. Correctly install condensing unit
7. Calculate suction line size
8. Calculate liquid line size
9. Measure gas supply line pressure
10. Measure gas manifold pressure
11. Adjust gas manifold pressure
12. Size gas supply line
13. Identify different types of gas furnace ignition systems
14. Determine gas furnace firing rate
15. Set heat anticipator
16. List factors for good vent design
17. Determine if unit charged correctly
18. Measure temperature split
19. Perform system evacuation
20. Demonstrate proper duct sealing techniques
21. Name byproducts of complete combustion
22. Name byproducts of incomplete combustion.
23. Identify reasons for incomplete combustion.
24. Demonstrate proper brazing techniques
25. Determine proper vent size for furnace
26. Demonstrate proper vent sealing techniques for positive pressure vent system
27. Correctly install evaporator to furnace
28. Determine proper gas orifice size
29. Demonstrate proper safety habits
30. Demonstrate proper use of electrical test instruments
31. Draw electrical schematics for heating, cooling systems including thermostats
32. Write the sequence of operation for gas and electric heat as well as air conditioning.
33. Identify all system components
34. Understand/demonstrate different aspects of copper tubing including:  
Identify tubing fittings – identify types of tubing – bending procedures – cut copper – flare tubing – swage tubing.
35. Use brazing/soldering equipment including; air-acetylene torch and oxygen/fuel torch
36. Perform both brazing and soldering procedures including the selection of joining materials and all processes.
37. Identify hanging materials
38. Measure transformer output
39. Perform leak detection.
40. Perform refrigerant recovery
41. Trace wiring diagrams

42. Describe the use of specialized equipment
43. Check the tightness and completeness of electrical connections
44. Interpret refrigerant gauge readings
45. Explain procedures for service
46. Identify and select air cleaners
47. Troubleshoot mechanical, electrical, refrigerant system and airside problems

### **STUDENT CONTRIBUTIONS:**

Each student will spend at least 3 hours per week preparing for class. Attendance is critical in this class. Students should make every effort to be in class on time and prepared for class.

### **CLASSROOM ENVIRONMENT:**

The classroom serves as a learning environment for everybody participating in this class. To facilitate academic and personal growth for everyone, you are expected to be courteous and respectful toward the instructor and other students. While I encourage an informal and friendly classroom environment that facilitates discussion and exploration, we must still accommodate one another's differing perspectives and opinions.

Each student must adhere to the Student Code of Conduct. The Student code of conduct was passed out to each student at the beginning of this class. The Student Code of Conduct can be found in the current Eastfield College Catalogue, or on the web site.

Ringling cell phones during the class period are a distraction. Unless it is an emergency call from a family member, all other cell phone calls are to be avoided. Family members and friends should be advised not to call during class time. If a student continues to receive numerous cell phone calls during the class period, the instructor may request the cell phone be turned **OFF**.

A student that is on call by his/her company may answer cell phones in the classroom. The student will then remove himself or herself from the classroom for the conversation. All other calls are to be avoided. The instructor may amend this rule as he/she sees fit.

Voice mail and text messages can be retrieved during the break between class lecture and lab.

## WRITING EXPECTATIONS:

In completing homework assignments, you must write out the question in a complete legible sentence. The answer must also be written in a complete legible sentence. No abbreviations or short words. Turning in a homework paper that does not meet these standards will result in the paper being returned to you with a comment to “Redo”.

## COURSE EVALUATION:

Your final grade will be made up of seven (7) parts:

### Quizzes:

(Homework, Quizzes, and other daily work. Lowest quiz grade will be dropped) 100 points each. 25% value of your final grade.

### Lab work

Lab assignments 100 points each. 25% value of your final grade.  
(Part of the lab grade will be how well you work as a team member in the lab and selection of tools to perform the lab)

**(Interpersonal C9-4 Technology C18-5)**

Major Tests, 100 points. 25% value of your final grade.

Final Exam. 100 points. 25% value of your final grade.

Notebook. (Extra credit and will be applied as an additional Quiz grade)

(Notebook will be graded on content, organization and neatness. Due at beginning of class meeting the week prior to final exam.)

**(Information C6-4)**

## Tests and Final Exam:

The exams will cover material from the assigned chapters in your textbook, quizzes, handouts and other assigned material. The exam can include multiple choice questions, true/false questions, fill-in-the-blank and short essay questions.

There will be no make-up exam unless arrangements have been made with the instructor before the exam date!. All assignments will be given a due date and will not be accepted late without a penalty.

**Final:** It is comprehensive, covering some material from the first three exams. The final can include multiple choice questions, true/false questions, fill-in-the-blank and short essay questions.

**Quizzes:** There will be quizzes and in-class assignments throughout the semester, covering material from your textbook, lecture, and handouts. These quizzes and assignments may be announced or unannounced. There will **NOT** be any make-up for these quizzes.

**Notebook:** The notebook will be a binder with tabbed sections (name of the section on the tab). There will be a cover sheet at the front with students name. The notebook will contain – all class work – all class notes- all handouts- all tests- and any project papers. The notebook will be turned in at the beginning of class meeting the week prior to the final exam day.

### GRADE BREAKDOWN:

100 TO 90 % of total possible points = A  
89 TO 80 % of total possible points = B  
79 TO 70 % of total possible points = C  
69 TO 60 % of total possible points = D  
Below 60 % of total possible points = F

### COURSE POLICIES:

1. **ATTENDANCE:** You are expected to attend EACH CLASS MEETING, and you are expected to be here on time, prepared, with your book and materials. Please consult with me whenever an absence is necessary. If you miss a class, you are responsible to cover the missed material on your own. Have a classmate share notes with you and make sure you know about homework or other assignments due during the next class period
2. **PREPARATION:** You are expected to do the reading assignment before you get to class. There are several advantages to such an effort by you. You will have read the material, and the class will not have to spend time bringing you up to where the rest of the class is.
3. **Daily Quiz:** You must be present in class each day when a daily test or pop quiz is given. You cannot “make-up” any daily test or pop quiz.
4. **MAJOR TESTS:** You are expected to be here for each exam. You cannot "make up" exams unless you have made specific arrangements with me before the scheduled exam. You MUST be present at the scheduled time for the final exam.
5. **LABORATORY WORK:** You cannot work in the lab if you do not have your required tools. The list of required laboratory tools will be given out in the first class meeting. You are expected to have your tools by the beginning of the second week of class.

The laboratory work sheets are to be turned in at the end of each laboratory assignment. You are to work with your laboratory partner, working on the assignment until the both of you have completed the assignment.

You cannot begin the next lab assignment until the previous lab assignment has been turned in. Lab work sheets turned in late will not be accepted. NO EXCEPTIONS.

Your instructor will retain all of your lab work until the week before an exam. After the lab work is returned to you, these lab assignments will not be accepted for grade. NO EXCEPTIONS.

6. **SAFETY GLASSES**: Safety glasses are required in all HVAC lab classes where the student is working on operating equipment. Your instructor is charged with enforcing this policy.

Students will be removed from labs if they do not have their safety glasses. The campus bookstore and several off campus stores have safety glasses for sale for those students who can't keep up with theirs.

8. **HOMEWORK**: You are expected to turn in the written assignment on time. All home work is due at the beginning of the next scheduled class and will not be accepted if it is late.

Your instructor will retain all of your lab work until the week before an exam. After the lab work is returned to you, these lab assignments will not be accepted for grade. NO EXCEPTIONS.

### **SEXUAL HARRASSMENT:**

Eastfield College has a zero tolerance policy on sexual harassment. All students shall report complaints of sexual harassment informally to the college Human Resources director or formally to the Vice Chancellor of Educational Affairs.

### **ACADEMIC HONESTY:**

The purpose of the Student Code of conduct is to provide guidelines for the educational environment of the Dallas county community college district. Such an environment presupposes both rights and responsibilities. Disciplinary regulations at the college are set forth in writing in order to give students general notice of prohibited conduct. Students should be aware of disciplinary acts for all forms of academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, plagiarism and collusion. Your College catalog and the DCCCD Catalog contain the entire Student Code of Conduct, which is also on the Internet at <http://dcccd.edu>.

### **PLAGIARISM:**

Do not plagiarize. You become guilty of plagiarism when you submit somebody else's work and/or words as your own. Plagiarism is a serious violation of the Student Ethical code and will result in measures reaching from a grade of "F" for the assignment in question to being dropped from or failed in this class.

Do not cheat. If you copy another student's work, then this will be treated in the same way as plagiarism.

## **FINANCIAL AID STUDENTS:**

If you are receiving Financial Aid grants or loans, you must begin attendance in all class. Do not drop or stop attending any class without contacting the financial Aid Office. Changes in your enrollment level and failing grades may require that you repay financial aid funds. Failure to contact the instructor will result in your name being submitted to the Financial Aid Office as a “non-attendee”. See direction in the syllabus for opening an e-mail account. You must attend and participate in your on-campus or online course(s) in order to receive federal financial aid. Your instructor is required by law to validate your attendance in your on-campus or online course in order for you to receive financial aid. You must participate in an academic related activity pertaining to the course but not limited to the following examples: initiating contact with your instructor to ask a question about the academic subject studied in the course; submitting an academic assignment; taking an exam; completing an interactive video; participating in computer-assisted instruction; attending a study group assigned by the instructor; or participating in an online discussion board about academic matters relating to the course. In an online course, simply logging in is not sufficient by itself to demonstrate academic attendance. You must demonstrate that you are participating in your online class and are engaged in an academically related activity such as in the examples described above. Failure to do so will prevent you from being certified and will affect your financial aid. Certification date :

## **ABSENCE FOR OBSERVATION OF HOLY DAYS:**

Please notify me during the first days of the class, of any days you expect to be absent for religious observances. You will be allowed to make up work missed on these days. See me for the necessary forms

## **AMERICANS WITH DISABILITIES ACT COMPLIANCE:**

It is the policy of Eastfield College to provide reasonable accommodations for qualified individuals who are student with disabilities. This college will adhere to all Federal, State and Local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact Eastfield College Disability Services Office at 972-860-8348, in a timely manner to arrange for appropriate accommodations.

## **EMERGENCY & INCLEMENT WEATHER PROCEDURE:**

In case of emergency or inclement weather conditions, Eastfield students should listen to KEOM-FM Radio station (88.5) as the primary media source. In partnership with the Mesquite Independent School District, Eastfield College Administration will notify KEOM immediately after a decision is made to cancel classes on any given day of inclement weather or for emergency purposes. Students may also monitor other local radio and television stations. The earliest an announcement may be broadcast on KEOM Radio is 6 a.m. Students may also refer to the Eastfield College web page [www.eastfieldcollege.com](http://www.eastfieldcollege.com) for the Inclement Weather announcement under the Features area of the front page. The announcement will be posted immediately following the decision to close the college.

## **REPEATABILITY ISSUE:**

Pending legislative action and Dallas County Community College District Board approval, effective for the Fall Semester 2005, the Dallas County Community Colleges will charge a higher tuition rate to students registering the third or subsequent time for a course. All third and subsequent attempts of the credit and Continuing education/Workforce Training courses will result in higher tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 semester. For complete information and updates, go to <http://www.dcccd.edu/ThirdCourseAttempt/>.

## **STOP BEFORE YOU DROP**

06/11/08

For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career, unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions.

Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a "W". Therefore, please exercise caution when dropping courses in any Texas institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access:

<https://www.dcccd.edu/coursedrops>

## **STUDENT E-MAIL:**

Legal privacy issues prevent your instructor from discussing your work or your grades on commercial e-mail accounts. If you wish to send your papers as attachments to an e-mail (and the instructor permits it), or if you have a question about your grade, you must open a student e-mail account. The account is free. You may set it up by going to [www.dcccd.edu](http://www.dcccd.edu) and click on Student Services, Online services.



### **Attendance Verification for Financial Aid**

Attendance is based on your participation in this class. Failure to participate may result in your financial aid award being reduced or eliminated. You are responsible for confirming the accuracy of your attendance record.

**Title IX and Diversity:** Eastfield College is committed to creating and fostering a learning and working environment that reflects, respects, and celebrates diversity. This is an integral part of the College's mission to provide excellence in teaching and learning. If you encounter sexual harassment, sexual misconduct, sexual assault, or discrimination based on sex, sexual orientation, and/or gender identity, we encourage you to contact the college's Title IX coordinator, Rachel Wolf (<http://www.eastfieldcollege.edu/SSI/title-ix/report-incident>). Additionally, if you feel comfortable doing so, you may discuss the incident with me. However, please be aware that while I will maintain your privacy, once you have shared information with me, I am required to share the basic facts of the incident with Ms. Wolf. For more information about Title IX and the college's policies, see the Eastfield College website: <http://www.eastfieldcollege.edu/SSI/title-ix/index>

### **OBTAINING YOUR GRADES AT THE END OF THE SEMESTER:**

Grade reports are no longer mailed. Convenient access is available online or by telephone. Just use your student identification number when you log in to e-Connect Web site address: <http://www.econnect.dcccd.edu/>

### **DCCCD DROP POLICY:**

If you consider dropping this class, please talk to me immediately. Many times there might be a better alternative than dropping a class, and I will be glad to help you in any way I can, or put you in touch with someone who can.

If we cannot find a more satisfying solution than dropping a class, then it is your RESPONSIBILITY to withdraw formally from the courses or courses. Withdrawing from a course is a formal procedure, which YOU must initiate: I cannot do it for you. You may do this in Admissions or Counseling. If you stop attending and do not withdraw, you will receive a performance grade, usually an "F".

To drop this class: See instructions in credit class schedule.

### **INCOMPLETES:**

An incomplete grade of "I" may be given when an **unforeseen** emergency prevents you from completing the work in a course. The "I" must be converted to a performance grade (A-F) within 90 days after the first day in the subsequent regular semester. If the work is not completed after 90 days, the "I" is converted to a performance grade, usually an "F"

## **PRINTING ON CAMPUS:**

Printing in the Computer Lab (L-108), Library, and Learning Assistance Center will cost 5 cents a page. Students must bring a \$1.00, \$5.00, \$10.00, or \$20.00 bill to the lab to create an account. Accounts must be created before attempting to print. No change is made in the lab. Once the money is in the bill acceptor, it cannot be retrieved. Cash refunds are not possible. Accounts stay active as long as the account has value.

## **HAZARDOUS MATERIALS:**

All students in this class have the right to know that they may be working with, or in the presence of, Hazardous Materials. A list of specific materials is posted on the "Green" Safety Bulletin Boards. Material Safety Data Sheets from the manufacturers are available in the Tool room or Tech room. Students will be trained and tested on the safe handling of these materials.

The Office of Institutional Equity, in coordination with DCCCD colleges, has the primary responsibility for reviewing, updating and carrying out compliance policies and procedures. The institutional equity and compliance officer and the Office of Institutional Equity make sure that college district policies and federal and state laws related to sexual assault, Title IX, Title II (Americans With Disabilities Act) and the Military Veterans Full Employment Act are followed to support diversity and inclusion. Students With Disabilities: If you are a student with a disability and/or special needs, or if you think you may have a disability, please contact the college Disability Services Office (DSO). Please note that all communication with DSO is confidential. If you are eligible for accommodations, please inform DSO to forward your accommodation request to your instructor as soon as possible, preferably at the start of the semester or program. For more information about the College Disability Services Office, please visit the Student Services website: [dccc.edu/DSOffices](http://dccc.edu/DSOffices) or contact the DCCCD Office of Institutional Equity at 214-378-1633. College Disability Services Offices Brookhaven 972-860-4673 Cedar Valley 972-860-8119 Eastfield 972-860-8348 El Centro 214-860-2411 Mountain View 214-860-8677 North Lake 972-273-3165 Richland 972-238-6180

A Note on Harassment, Discrimination and Sexual Misconduct We are committed to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX and DCCCD policy prohibit harassment, discrimination and sexual misconduct. If you encounter harassment, sexual misconduct (sexual harassment, sexual assault, stalking, relationship violence) or retaliation or discrimination based on race, color, religion, age, national origin, disability, sex, sexual orientation, gender identity and/or gender expression, please contact your college Title IX coordinator or the Office of Institutional Equity. We treat this information with the greatest degree of confidentiality possible while also ensuring student welfare and college safety. We are concerned about the well-being and development of our students and are available to discuss any concerns. There are both confidential and nonconfidential resources and reporting options available to you. If you wish to keep the information confidential, please contact college Counseling or student Health Services. As required by DCCCD policy, incidents of discrimination and/or sexual misconduct shared with faculty will be reported to the college Title IX coordinator or district Title IX coordinator. The Title IX coordinator will contact you and determine if further investigation is needed. For more information about policies, resources or reporting options, please contact your college Title IX coordinator or visit [dccc.edu/TitleIX](http://dccc.edu/TitleIX). College Title IX Coordinators Brookhaven Terri Edrich [TitleIX-BHC@dccc.edu](mailto:TitleIX-BHC@dccc.edu) 972-860-4588 Cedar Valley Grenna Rollings [TitleIX-CVC@dccc.edu](mailto:TitleIX-CVC@dccc.edu) 972-860-5222 Eastfield Rachel Wolf [TitleIX-EFC@dccc.edu](mailto:TitleIX-EFC@dccc.edu) 972-860-7325 El Centro Shantee Moore [TitleIX-ECC@dccc.edu](mailto:TitleIX-ECC@dccc.edu) 214-860-2626 Mountain View Regina Garner [TitleIX-MVC@dccc.edu](mailto:TitleIX-MVC@dccc.edu) 214-860-5675 North Lake Francienne Maynard [TitleIX-NLC@dccc.edu](mailto:TitleIX-NLC@dccc.edu) 972-860-3980 Richland Bill Dial [TitleIX-RLC@dccc.edu](mailto:TitleIX-RLC@dccc.edu) 972-238-6352 Dallas Colleges Online La’Kendra Higgs [TitleIX-LEC@dccc.edu](mailto:TitleIX-LEC@dccc.edu) 972-669-6590 District Title IX Coordinator Office of Institutional Equity LaShawn Grant [TitleIX-District@dccc.edu](mailto:TitleIX-District@dccc.edu) 214-378-1633

Course Calendar for HART 2438  
Air Conditioning Installation and Service

**TENTATIVE ASSIGNMENTS**

1. **Introduction**

Syllabus  
Explanation of Classroom Format  
Student Learning Outcomes  
Week 2 Reading Assignment Refrigeration and Air Conditioning  
Technology; 8th Edition (RACT) pgs.86-102  
Answer questions at the end of Unit 4

2. **Safety**                      **Unit 4**

Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 3 Reading Assignment (RACT) pgs.1143-1165  
Answer questions at the end of Unit 38  
Lab 1

3. **Installation**                      **Unit 38**

Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 4 Reading Assignment (RACT) pgs. 1093-1141  
Answer questions at the end of Unit 37  
Lab 2

4. **Air Distribution and Balance**                      **Unit 37**

Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 5 Reading Assignment (RACT) pgs. 155-186 and 884-886  
Answer questions at the end of Unit 7  
Lab 3

5.           **Gas Piping            Unit 7**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 6 review Reading Assignment (RACT) 1-5, Handouts, and Lecture notes  
Hand out Mid Term review questions  
Answer questions at the end of Unit 31  
Lab 4
  
6.           **Review for midterm test week 8    Continuation of Labs**
  
7.           **Spring Break**
  
8.           **Mid Term Exam Week**  
  
Reading Assignment (RACT) pgs. 836-907  
Answer questions at the end of Unit 31
  
9.           **Gas Furnace                            Unit 31**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 10 Reading Assignment (RACT) pgs. 1007-1014  
Answer questions at the end of Unit 34  
Lab 5
  
10.          **IAQ    Unit 34**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 11 Reading Assignment (RACT) pgs. 148-169, and Handouts  
Lab 6
  
11.          **Refrigerant Piping            Unit 7**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 12 reading assignment pgs. 1218 thru 1231  
Answer questions at the end of Unit 40  
Lab 7

12.           **Operation Conditions    Unit 40**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 13 Reading Assignment (RACT) pgs. 11233-1262 and Handouts  
Answer questions at the end of Unit 41, answer questions 1 thru 20  
Lab 8
  
13.           **Troubleshooting (Cooling)    Unit 41**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 14 Reading Assignment (RACT) pgs. 818-835 answer question 1  
thru 15 at the end of Unit 30  
Lab 9
  
14.           **Electric Heating    Unit 30**  
Objective(s)  
Discussion  
Quiz over reading assignment  
Lecture  
Week 15 review Reading Assignment (RACT) 11-14, Handouts, and  
Lecture Notes.  
Will be given final review questions  
Lab 10
  
15.           **Notebooks due, Review for final exam,**
  
16.           **Final Exam**

Do not work too far ahead. These assignments are only tentative and may be changed by your instructor without prior notice.

# Eastfield College

## Air Conditioning and Refrigeration

### Tool and Instruments list

#### **GENERAL TOOLS:**

Safety glasses  
Tool box or pouch

#### **BASIC ELECTRIC METER:**

Any multimeter that will measure: Volts, Amps, Ohms, Temperature and Capacitance.

*Examples of this meter:*

Fluke 116/322 HVAC Comb. Kit

#### **REFRIGERANT TOOLS:**

Compound manifold gauge set with check valve hoses and one 90° low loss fitting

Refrigerant valve core tool (ratchet with adapter)

Compound manifold gauge set with check valve hoses and one 90° low loss fitting for use with 410a refrigerant only.

#### **HAND TOOLS:**

8 in. and 12 in. adjustable open-end wrenches

Allen wrench set

Refrigeration ratchet wrench & adapter

6". combination pliers

Wire cutter pliers

Six in one screwdriver

Fireplace lighter

Insulated test/jumper leads with alligator clips

Ball Peen Hammer

Leather and Latex or vinyl disposable gloves

#### **POWER TOOLS**

Cordless drill (with fully charged battery) and socket bits (1/4<sup>th</sup>, 5/16<sup>th</sup>, 3/8<sup>th</sup>, and 7/16<sup>th</sup>)

This syllabus is intended as a set of guidelines for this course. Eastfield College and your instructor reserve the right to make modifications in content, schedule and requirements as necessary to promote the best education possible within prevailing conditions affecting the course

