



Technical College of the Lowcountry
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Beaufort, SC 29902

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ACR 107 WIRING DIAGRAMS

Course Description

This course covers the basic requirements for interpretation of wiring diagrams used in air conditioning and refrigeration equipment.

This is an entry level course there are no pre/co-requisites.

2 Cr (2 lect/pres, 0 lab, 0 other)

Course Focus

The instructor will instruct how to read and understand electrical symbols and what each one represents. The instructor will also instruct how to read and understand wiring diagrams.

The course outline will be unit 27, page 691, unit 30, pages 804 – 810, unit 31, pages 865 – 879 and unit 43, pages 1263 – 1270. Handouts of manufactures schematic diagrams will also be used.

Text and References

Refrigeration & Air Conditioning Technology, 7th. Edition, Whitman, Johnson, Tomczyk & Silberstein

Publisher: Delmar Cengage Learning, Clifton Park, N.Y.

Published: 2012

ISBN: 1-1116-4447-0

Refrigeration & Air Conditioning Technology Lab Manual, 7th. Edition, Whitman, Johnson, Tomczk & Silberstein.

Publisher: Delmar Cengage Learning, Clifton Park, N.Y.

Published: 2012

ISBN: 1-1116-4448-9

The Constructor
CMH Software Inc.

Manufactures wiring diagrams.

Course Goals

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. explain electrical loads
2. explain purpose of loads
3. give examples of loads
4. identify symbols of loads
5. address purpose of relays
6. express purpose of switches
7. draw relay/contactor symbol
8. define electrical loads
9. describe normally closed
10. describe normally open
11. determine de-energized coil
12. determine energized coil
13. diagram single pole
14. diagram two pole
15. understand wiring diagram types
16. interpret cooler schematic
17. interpret humidifier schematic
18. draw electrical symbols
19. analyze freezer schematic
20. analyze gas furnace schematic
21. breakdown control relay schematic
22. comprehend pump down schematic
23. diagnose using a schematic
24. locate components using schematic
25. sketch wiring diagram
26. troubleshoot furnace using schematic
27. understand wire sizes
28. verify wire location
29. wire thermostat using schematic
30. wire unit using schematic

Student Contributions

Each student must complete all reading and written assignments.
In addition, chapter tests are to be completed as assigned.
Students will also complete a final exam/project to demonstrate their knowledge of the material. The student will apply the electrical schematic to a HVAC unit.
The student will not be allowed in the lab with any type of open toe shoe. (flip flops etc.)
No cell phones are allowed to be used in the classroom or lab. This includes texting.
No recording of classes is allowed.
The student must have all required books by the second class of the semester. No copies of any books or manuals are allowed.
The student is expected to be in class on time.

Course Evaluation

There will be exams from handout provided by the instructor worth 30 points.
There will be a final exam worth 70 points.

Course Schedule

The class meets for 2 lecture/presentation hours per week.

Approved by: *Kenneth Flick* Developed/Revised: 3-4-2013
Ken Flick, Division Dean for Business/Industrial Technology

ADA Statement

The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ACADEMIC MISCONDUCT

There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student's responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the *TCL Student Handbook*, the Division Office, and the Learning Resources Center.

ATTENDANCE

- The College's statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.
 - Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
 - Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
 - Reinstatement requires the signature of the division dean.
- In the event it becomes necessary for a student to withdraw from the course *OR if a student stops attending class, it is the student's responsibility to initiate and complete the necessary paperwork*. Withdrawing from class may have consequences associated with financial aid and time to completion.
- When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdraw the student with a grade of "W", "WP", or "WF" depending on the date the student exceeded the allowed absences and the student's progress up to the last date of attendance
or
under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

- Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.
- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.
- A copy of TCL's STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

HAZARDOUS WEATHER

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVH 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

Emergency Text Message Alert

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancellations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on "emergency TextAlert at TCL" and fill out the form or go to www.tcl.edu/textalert.asp