



Technical College of the Lowcountry
921 Ribaut Rd.
Beaufort, SC 29901

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ACR 221 RESIDENTIAL LOAD CALCULATIONS

Course Description

This course is a study of heat losses/gains in residential structures. Methods for determining heat loss/gain are included, along with building load requirements.

There are no pre/co-requisites.

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

Course Focus

The instructor will instruct the correct use of the manual. The entire course is open book. The instructor will provide plans for practice load calculations. Sections I, II, III, IV, V are covered in the course. Also Tables 1, 2, 3A, 4, 5, 6, 7A, 7B and the Manual J worksheet are included in the course.

Text and References

Manual "J" Load Calculation for residential Winter and Summer Air Conditioning,
7th.edition,Hank Rutkowski

Publisher: Air Conditioning Contractors of America, Arlington, Va.

Published: 1986

ISBN: 1-892-765-01-2

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. find outside design conditions
2. state inside design conditions
3. show building losses
4. show system losses

5. calculate square footage
6. understand infiltration heat gains
7. figure heat gain calculations
8. understand heating equipment capacity
9. figure heat loss calculations
10. specify people heat gain
11. specify appliance heat gain
12. understand duct heat gains
13. read basic principles
14. use table one
15. read table two footnotes
16. use table two
17. understand table three
18. use table four
19. calculate infiltration evaluation
20. determine rsm value
21. determine duct loss multiplier
22. determine duct gain multiplier
23. obtain shaded area
24. solve latent gain
25. collect building data
26. compute building volume
27. compute room area
28. compile htm data
29. practice load calculation
30. perform load calculations

Student Contributions

The student is expected to be prepared for class and to be in class on time.

A calculator is required for this class.

Pencils are required for this class.

The student is required to observe and practice all safety rules.

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 is required to purchase at least four Manual J worksheets

Course Evaluation

There will be at least two practice load calculations. There will be one open book exam. There will be one final load calculation exam. Each exam is worth a maximum of 50 points for a maximum total of 100 points.

Course Schedule

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

Approved by: *Kenneth Flick* Developed/Revised: 3/5/2013
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, WLVA 101.1, WSOK 1230 AM, WAEV 97.3, WTOG 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