Welcome to MEEG 4473
Indoor Environmental Design

FALL 2013
Location: Bell Room 2273
T-Th 11:00 a.m. – 12:15 p.m.

Dr. Darin W. Nutter, P.E., FASHRAE
Professor
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Course Objectives: To provide the student with an introduction and mastery of the fundamental theories of air conditioning design including the heating and cooling loads along with the proper selection and sizing of air conditioning equipment.


Required Prerequisite: MEEG 4413 – Heat Transfer

Class Weather Policy: I will attempt to place a message on my voice mail whenever class will be canceled due to bad weather or illness. You may also phone 575-7000, Radio: KUAF 91.3 FM, or web page: http://emergency.uark.edu/14701.php information on UA notices for inclement weather.

Office Hours: TBD and announced in class.

Academic Honesty: I am committed to the principle of academic honesty and I expect each student in my class to maintain a high stand of academic integrity. I support the University of Arkansas policy concerning academic honesty that is described in the current Undergraduate Studies catalog. Consequently, any student involved in an academically dishonest act will be given an F in the class and the action will be reported to the All University Judiciary. Also, see the new UA Academic Integrity Policy-http://provost.uark.edu/245.php.

Grades: (final grading scale based on 90/80/70/60…)

Homework, Quizzes, and In-class problems 15%
Design Project 10%
Two hourly exams 50%
Final exam (comprehensive) 25%

Homework, Quizzes, and In-class problems: ‘Homework’ assignments will consist of out-of-class and in-class assignments, and potentially a quiz or two. Some in-class assignments may be in groups chosen by the instructors. Homework will be presented in class and generally posted on the Blackboard (learn.uark.edu) website. Disorganized or messy homework will be penalized. Due dates/times will be posted with each assignment. Late assignments are not accepted unless prior arrangements have been made. Also, in order to account for homework not turned in due to unexpected absences, the lowest single score will be dropped (this can be any type – homework, quiz, or in-class problem). Collection of assignments will be specified by the instructor.

Exams: No makeup exams will be given for missed hourly exams, unless arranged prior to test; instead, the final exam will count double.
Cell Phone Policy: Phone calls and text messaging during class are disruptive; therefore, all cell phones must be silenced prior to the start of class. Repeated violations of this policy will not be tolerated.

Dates of Interest:
- September 2nd – Labor Day Holiday
- October 21st – 22nd – Fall Break
- November 22nd – Last day to drop a semester class with “W”
- November 27th – 29th – Thanksgiving holiday
- December 13th – Dead Day
- December 17th – Final Exam (Tuesday, 10:15 a.m. – 12:00 p.m.)

Course topic outline and targeted exam dates (subject to change with notification):

1. Introduction and history of air-conditioning
2. Building Design Procedures, introduction to design project, and review of refrigeration cycle
3. HVAC systems and components
4. HVAC systems continued – UA tour
5. HVAC systems continued – UAFS tour
6. Psychrometrics – introduction
7. Psychrometrics – classic moist air processes
8. Psychrometrics – in-class problems
9. Psychrometrics – systems
10. Psychrometrics – in-class problems
11. Visiting HVAC engineer – “Incorporating current technology into HVAC designs”
12. Design conditions
13. Exam review
14. UAFS visit #1
15. Exam #1 (Tuesday, October 17, 2013)
16. Load estimating fundamentals
17. Load estimating fundamentals, continued and in-class problems
18. Manual Heat Load
19. Manual CLTD method introduction
20. Manual CLTD method, continued
21. Duct design
22. Duct design
23. Building energy simulation model(s)
24. Building energy simulation model(s),
25. Design project, continued
26. Design project, continued
27. Exam review
28. UAFS visit #2
29. Exam #2 (Tuesday, December 5, 2013)
30. Final exam review

Definition:

Air-conditioning is the process of treating air to control simultaneously its temperature, humidity, cleanliness, and distribution as required by occupants, a process, or a product in a space.

By Willis Carrier