

CM 3180-002 Fall Semester 2009
Building Techniques and Methods III,
3 (Class) – 2 (Lab) – 4 (Credit)

Class Room H323 Periods: Wednesdays and Fridays from 3:00 to 4:25 PM

Text: Mechanical and Electrical Systems in Buildings By: Tao and Janis – edition 4

Recommended: ASHRAE Fundamentals

Other Refs: Texts from courses in major, plans, library and internet materials

Grading: A=90 to 100, B=80 to 89, C=70 to 79, D=60 to 69, F<60

Tests & Final Oral Presentation = 60 %

Plan Review paper = 15%

Assignments = 15%

Class Attendance = 10%

Faculty Contact Info: Dr. Yar Makarechi, PE

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Class	Date	Subject of Lecture	Reference(s)
1 **	8/26	Introduction to the Course and CMD Ethics HVAC-Human Comfort-	Text and Vista
2 **	8/28	Fundamentals of Air Conditioning Review Carrier Provided Unit	Text and Vista
3 **	9/02	Psychrometrics	Text and Vista
4 **	9/04	The Cooling and Heating Load	Text and Vista
5	9/09	Plan Review	Text and Vista
6	9/11	Online Exam 1 Ch 1-3 No Class	Text and Vista
7	9/16	Cooling Systems	Text and Vista
8	9/18	Heating Systems	Text and Vista

9 ##	9/23	HVAC Equipment and Operations	Text and Vista
10	9/25	Delivery Systems – Air & Water	Text and Vista
11	9/30	HVAC Plan Review	Text and Vista
12	10/02	Plumbing and Fire Protection Systems	Text and Vista
13	10/07	Online Exam 2 Plbg & FP No Class	Text and Vista
14 **	10/09	Fire Protection – Plan Review	Text and WebCt Vista
15	10/14	Fire Protection – Components, Connections, & Operation	Text and Vista
16 ##	10/16	Plumbing Equipment and Systems	Text and Vista
17	10/21	Plumbing Components & Operation	Text and Vista
18 **	10/23	Plumbing Plan Review	Text and Vista
19	10/28	Online Exam 3 Electrical No Class	Text and Vista
20 **	10/30	Introduction to Electricity	Text and Vista
21	11/04	Electrical Systems and Equipment	Text and Vista
22	11/06	Electrical Design & Wiring Considerations	Text and Vista
23 ##	11/11	Auxiliary Electrical Systems	Text and Vista

24	11/13	Motors and Motor-Generators	Text and Vista
25 **	11/18	Online Exam 4 Lighting No Class	Text and Vista
26	11/20	HVAC Control Systems	Text and Vista
Holidays	11/25-27	Light and Lighting Lighting Equipment & Systems	Text and Vista
27##	12/02	Calculations of Illumination	Text and Vista
28	12/04	Low Voltage Networking Systems	Individual Projects Due
Final Class	12/09	Final Exam Overview	Pop Quiz
Final Exam	12/11	Online Exam 5 Piping Ducting and Wiring No Class	Projects Due

** Required for Specialty Capstone ## Required for all Capstone Projects

NOTE: This syllabus is intended to represent the general format of the class.

The instructor may make changes if it is determined that such changes will better suit the needs of the students.

Catalog Description:

Study of building mechanical and electrical systems and how they affect the construction organization and construction project. Topic will include air conditioning, heating, plumbing, fire protection, electrical power, electrical lighting and building control systems. The analysis of current construction drawing will be integrated into each topic.

Course outcomes based on historical objectives:

By the end of this course the student should be able to:

- 1- Demonstrate understanding of how building mechanical and electrical systems can affect the cost and schedule of a construction project.
- 2- Demonstrate understanding of how each MEP system functions.
- 3- Demonstrate understanding of how the MEP systems work together and interact with each other.
- 4- Review MEP plans

- 5- Demonstrate awareness of the departmental and institutional resources available on websites and to CM students on campus.

Cell Phone and PDA policy

Use of cell phone/PDA/Pager/blackberry etc. during class is strictly prohibited and will result in the dismissal of the student from that particular class and the receipt of a “zero” for that class’s particular assignment, exercise, exam, quiz, etc. This includes any noise or sound from the device during the lectures. The second incident/use of such devices during class will result in the withdrawal of the student from the class by the instructor. Withdrawal of the student by the instructor after the official “drop date” will result in the grade of a “WF” for the student.

ASHRAE Membership and Activity

Membership to American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) is free and encouraged for the students of this class. Instructor will inform students of local ASHRAE meetings and activities and will credit students with bonus grades for their participation.

Plan Review Paper

Students will select one of the technologies (systems) covered in the class and write a report describing that system for a real project based on plans or walk through of the project. The report shall be supported by diagrams, pictures and manufacturer catalogues of the major components of the system. Minimum of 2 pages of core text, word-processed (specifications: 12 point Times New Roman font, single spaced, margins L = 1.5”, R = 1.0”, top and bottom 1.0”). Provide at least 5 more pages of pictures, graphs and cut sheets with description. Provide title page with course number and name, your name and date submitted. Include research references (include dates and names) and any attachments at end. Include transmittal memo to course professor.

Transmittal memo on top

Title page

Report w/ core text and table/graph/pictures/+ text

Research references (include at least name and dates even for web-links)

Other Attachments and catalogue information

Additional Notes:

1- *The course description and course schedule handouts provide the general framework for the course. However, the instructor reserves the right to make any modifications or changes to the course, depending on the class progress, or on any special circumstance that may arise during the semester.*

2- *There will be no curve for the final grade, only straight averages. The minimum cutoff for an A is 89.5% and above; for a B is 79.5% and above; for a C is 69.5% and above; and for a D is 59.5% and above. Anything below 59.5% is considered an F. The instructor reserves the right to lower these cutoff values depending on specific circumstances surrounding the overall performance of the class.*

3- *Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the counselor working with disabilities at (770) 528-7226 as soon as possible to better ensure that such accommodations are implemented in a timely fashion.*

4- *It is assumed that by this time in the student's matriculation, he/she is well-versed with what constitutes plagiarism. Proper citation of references is required for this and all your coursework in the CNST program. Failure to comply with this requirement may result in disciplinary action.*