Syllabus for CET3100 - Building Mechanical Electrical Systems

General Information

**Course Title** - Building Mechanical & Electrical Systems  
**Course Number** - CET3100  
**Credits** - 3 credits  
**Class Hours** - 42 hours (3 hours per week)  
**Laboratory Hours** - 0 hours  
**Prerequisite Courses** - None

**Professor** - Larry Sutter  
Room 232 EERC Building  
487-2268  
llsutter@mtu.edu  
Office Hours: By Arrangement

**Course Outcomes** - This course introduces the various mechanical & electrical systems used in buildings. This information course provides technical knowledge required for a construction management graduate.

**Course Description** - Overview of mechanical and electrical elements which comprise building systems. Topics include HVAC systems and controls, electrical power distribution and lighting, fire detection, alarm, and communications. Emphasis is placed on understanding the integration of these elements into a building system.

**Textbooks** - "Mechanical & Electrical Systems in Construction and Architecture"  
Frank Dagostino and Joseph Wujek  
Prentice Hall

**Computer Usage** - Moderate - Must use a word processor to prepare reports, spreadsheets for calculations and plotting data, and e-mail program for communicating with the Professor and other students.

**Calculus Usage** - None

**Library usage** - Minimal - As needed by the student
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Grading

Attendance/Participation - Recommended 20 Points Overall

Communication Skills Required - Students will be asked to write lab reports and write paragraphs as part of the quizzes and examinations. 10 Points Overall

Quizzes and Homework - Quizzes lasting approximately 10 minutes will be given in class as appropriate. Approximately 1-2 homework assignments will be collected for grading each week. A quiz or homework assignment is weighted for significance by the total possible number of points allotted for the individual assignment. 50 Points Overall

Hour Examinations - 3 - One (1) hour examinations. 100 Points Overall

Final Examination - Comprehensive 20 Points Overall

Overall Grading 200 point system / Converted to Percent Overall via a straight curve
Note: Straight curve means 100%-95%=A, 94%-90%=AB, 89%-85%=B, 84%-80%=BC, 79%-75%=C, 74%-70%=CD, 69%-65%=D, below 65%=F. All fractional values of Overall Grade rounded up.

Late Assignments All late assignments will have 10% deducted for each day late. No assignments accepted after 7 calendar days.
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Example Calculation

**Quizzes and Homework**

- Homework 1 - 5/5
- Homework 2 - 6/10
- Homework 3 - 9/10
- Homework 4 - 8/10
- Homework 5 - 9/10
- Homework 6 - 8/10
- Homework 7 - 7/10
- Homework 8 - 14/20
- Homework 9 - 8/10
- Homework 10 - 9/10
- Homework 11 - 7/10
- Homework 12 - 9/10
- Quiz 1 - 8/10
- Quiz 2 - 0/20
- Quiz 3 - 8/10

**Quiz/Homework Grade** = 115/165 = 69.7% = 34.8 overall points

**Examinations**

- Exam 1 - 94%
- Exam 2 - 89%
- Exam 3 - 88%

**Examination Ave.** = 89.7% = 89.7 overall points

**Final Examination**

- Final - 81% = 16.2 points

**Class Participation** *

100% = 20.0 points  
* Based upon instructor review, and as applicable, peer review.

**Communication** *

90% = 9.0 points

**Overall Grade**

169.8 of 200 possible points = 169.7/200 = 84.9% = 85% = B
Cheating and Plagiarism

Anyone engaging in activities deemed to constitute cheating or plagiarism will be given an F in the course and turned over to the Dean of Students for disciplinary action consistent with the Code of Student Conduct and University Policies.

Unless otherwise instructed in writing by the Professor, all students are expected to do their own assignments and examinations.

MTU complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990 (ADA).

If you have a disability and need reasonable accommodation for equal access to education or services, please contact the Dean of Students Office for assistance. For other concerns about discrimination, you may contact your advisor, department head, or the Affirmative Action Office.
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**Week 1**
- Plumbing Fundamentals
- Water Supply System Design
  - Chapter 1
  - Chapter 2

**Week 2**
- Water Supply System Design (cont.)
- Sanitary Drainage
  - Chapter 2
  - Chapter 3

**Week 3**
- Sanitary Drainage (cont.)
- Wastewater Disposal
- Storm Water Drainage
  - Chapter 3
  - Chapter 4
  - Chapter 5

**Week 4**
- Storm Water Drainage (cont.)
- Thermal/Environmental Principals
  - Chapter 5
  - Chapter 6
  - Test

**Week 5**
- Thermal/Environmental Principals (cont.)
- Heating Load Computations
- HVAC Equipment/Systems
  - Chapter 6
  - Chapter 7
  - Chapter 8

**Week 6**
- HVAC Equipment/Systems (cont.)
- Hydronic Heating Systems
- Forced Air Heating Systems
- Electric Heating Systems
  - Chapter 8
  - Chapter 9
  - Chapter 10
  - Chapter 11

**Week 7**
- Test

**Week 8**
- Cooling Load Computations
- Forced Air Cooling Systems
  - Chapter 12
  - Chapter 13

**Week 9**
- Solar Heating
- Electrical Theory, Materials, Systems
  - Chapter 14
  - Chapter 15

**Week 10**
- Electrical Theory, Materials, Systems (cont.)
- Building Electrical Design Principals
  - Chapter 15
  - Chapter 16

**Week 11**
- Building Electrical Design Principals (cont.)
- Light/Architectural Light Design
  - Chapter 16
  - Chapter 17
  - Test

**Week 12**
- Review/Overrun
- Thanksgiving Recess

**Week 13**
- Safety Systems
- Telecommunications
- Acoustics
  - Chapter 18
  - Chapter 19
  - Chapter 20

**Week 14**
- Test