



**Course Syllabus**

**Course #:ADT 2190 Course Name: Building Systems**

**Division: Engineering and Industrial Technologies**

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**Class Days:**

**Class Time:**

**Location:** Classroom: E209

Laboratory: E209

**Credit Hours:** 3

**Contact Hours:** 4

**Lab Hours:** 2 **Lecture Hours:** 2

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**Instructor:** William Hotz

**Office Location:** E215G

**Phone:** 419-559-2448

**Email Address:** \_whotz@terra.edu

**Office Hours:** TBD

**Division Office/Location:** Engineering Building **Division Fax:** 419-334-2300

**Full-time Contact Person:** Jayne Bowersox

**Phone(s):** (419) 559-2410

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**Course Description:**

The course covers designing and drawing of plans and details for heating and cooling systems, water supply, plumbing, and electrical systems. Methods of sizing systems and use of handbooks are studied.

**Prerequisite(s):** None

**Corequisite(s):** None

**Entry Level Skills and Knowledge:**

The designing and drawing of plans and details

**Required Texts, Supplies and Equipment:**

**TEXT:** Design of Mechanical and Electrical Systems in Buildings by Trost and Choudhury  
Standard drafting equipment

**Grading:**

90 – 100 = A

80 – 89 = B

70 – 79 = C

60 – 69 = D

59 and Below = NC

**Learning Outcomes:**

## General Education

1. **Communicate effectively**
2. **Evaluate arguments in a logical fashion**—Competence in analysis and logical argument are explicit learning goals for most general education programs, although these skills go by a variety of names (e.g., critical thinking, analysis, logical thinking, etc.). **Students will be able to demonstrate competence in problem solving in communication, mathematics, and in team settings.**
3. **Employ the methods of inquiry characteristic of natural sciences, social sciences, mathematics, and the arts and humanities;** general education introduces students to methods of inquiry in several fields of study and thereby prepares students to integrate information from different disciplines.

## Technical

1. To understand the fundamental procedures for drawing mechanical and electrical plans and details.
2. A working knowledge of the standard symbols used.
3. To understand the relationship between the mechanical and electrical systems to the architectural and structural components of buildings.
4. To understand the relationship between the design and the drafting of mechanical and electrical systems.
5. Methods of sizing systems and utilization of handbooks are studied.

## Plan of Work

### Session:

1	Lighting perception and measurement Answer questions assigned
2	Review answers Light sources Answer questions assigned
3	Review answers Lighting design, sunlight and daylighting Answer questions assigned
4	Review answers Lighting design examples and photometric numbers and calculations Answer questions assigned
5	Test and starting of lighting design project
6-8	Work on lighting design project due at beginning of 9 <sup>th</sup> session class

**Topical Outline (Continued):**

9	Electrical basic and terms
10	Residential electricity
11	Commercial electricity
12	Review example office building.
13	Test and starting of electrical design project
14 - 16	Work on electrical project
17	HVAC terms, comfort and psychometric
18 - 19	Heat loss and gain
20	Heating and cooling equipment
21	Building air conditioning and air distribution
22	Annual cost and efficient design
23	TEST
24 -26	Work on HVAC project
27	Water supply and waste water
28	Site and roof drainage
29	Building plumbing
30	Plumbing Design
31	TEST
32	Work on plumbing project

**Assessment of Student Learning:**

Assessment Project and Measurement in course (if any):

**Course Requirements:**

Complete all assignments as required  
Five projects will be required designing the various systems. 40%  
Project may be done on C.A.D.  
Four tests 60%

## **Policies**

**Course Withdrawing:** If for any reason you need to withdraw from this course, be certain that you do so according to College procedure. It is your responsibility to know and follow this procedure. If you simply stop coming to class, without officially withdrawing from the course, your grade is an automatic “F.” Please follow official College procedure for withdrawing from this or any course.

*College Academic Policies are located in the College Catalog. A copy of the current catalog may be picked up in any of the division offices or admissions. The list of college policies is also available online at <https://www.terra.edu/register/Collegecat/policies.asp>.*

**Support Services:** The College offers a number of support services to assist in your success in this course and all courses. Among these services are the Writing & Math Center in B105, the Office of Learning Support Services, which coordinates the campus disability services and tutoring programs, the computer labs, and the computers in the atriums.

Any student who feels he/she may need an accommodation based on the documentation of a disability should contact the Office of Learning Support Services privately to discuss his/her specific issues. Please contact the OLSS at (419) 334-8400 X 208 or visit 100 Roy Klay Hall (Building A) to coordinate reasonable accommodations.

***If you have a documented disability and are receiving academic accommodations through the Office of Learning Support Services, please schedule a meeting with your instructor in a timely manner so that we may discuss how these services will be arranged.***

Tutoring services are available to students beginning the second week of every quarter. Students requesting tutoring services should obtain a tutor request form from the OLSS in 100 Roy Klay Hall (Building A) or online at the Terra website. Please note that instructor verification and acceptance of the Student Learner Agreement is necessary for all tutoring requests. All requests should be submitted to 100 Roy Klay Hall (Building A).