

**Construction Management Department  
California State University, Chico**

**CMGT 235 – Electrical and Mechanical Systems  
Course Syllabus**

**A. Prerequisites**

CMGT 210 – Analysis of Construction Drawings and Specifications  
PHYS 202B – General Physics

**B. Meeting Time & Location**

CMGT 235 - 02    Class #3129    T/TH    11:00AM – 12:15PM    O’Connell, Room 131

**C. Instructor**

Brendan Coakley    [bcoakley@csuchico.edu](mailto:bcoakley@csuchico.edu)  
Office Hours:    Tuesday 8:00 – 9:00 AM, or by appointment  
Office Location:    Facilities Management Admin, 940 West First Street  
Office Phone:    530-898-3890

**D. Catalog Description:**

An introduction to mechanical, electrical, and plumbing systems and the integration of these systems into the building design and construction process.

**E. Course Learning Outcomes (CLO):**

*Upon successful completion of this course, the student will:*

1. Understand sustainable options for plumbing systems **[Reinforce: ACCE-SLO #18]**.
2. Understand sustainable options for mechanical systems **[Reinforce: ACCE-SLO #18]**.
3. Understand sustainable options for electrical systems **[Reinforce: ACCE-SLO #18]**.
4. Understand fundamental properties of plumbing systems, such as pressure, velocity, and flow rate **[Reinforce: ACCE-SLO #20]**.
5. Understand plumbing components using correct terminology and nomenclature **[Reinforce: ACCE-SLO #20]**.
6. Apply simple plumbing distribution, sanitary drainage, and storm water drainage systems.
7. Understand fundamental properties of HVAC (heating, ventilating, and air conditioning) systems **[Reinforce: ACCE-SLO #20]**.
8. Understand the psychrometric chart **[Reinforce: ACCE-SLO #20]**.
9. Understand HVAC components using correct terminology and nomenclature **[Reinforce: ACCE-SLO #20]**.
10. Apply advantages and disadvantages of different HVAC systems available for building structures.
11. Understand the fundamental units of electricity, such as resistance, current, voltage, power, and energy, and solve problems using them **[Reinforce: ACCE-SLO #20]**.
12. Understand the advantages and disadvantages of different types of electrical systems, such as AC versus DC, and single-phase versus three-phase power **[Reinforce: ACCE-SLO #20]**.
13. Apply correct terminology and nomenclature for electrical, lighting, and communication components.

### **Student Learning Outcomes (SLO):**

The American Council for Construction Education (ACCE) prescribes 20 Student Learning Outcomes (SLO) as Educational Objectives for an undergraduate degree program in Construction Management. For a list of these 20 SLOs visit the Chico State Department of Construction Managements website [www.csuchico.edu/cm](http://www.csuchico.edu/cm) and the SLO link under ACCE Accreditation drop down menu.

The following SLOs are supported by this course in the form of I=Introduction, R=Reinforced, or DA-Direct Assessment:

- SLO 18 – Understand the basic principles of sustainable construction (R/DA).
- SLO 20 – Understand the basic principles of mechanical, electrical, and plumbing systems (R/DA). ☒

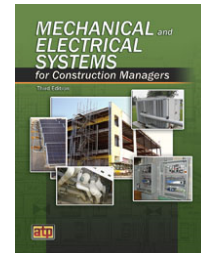
### **ACCE Direct Assessment Mapping:**

<u>SLO</u>	<u>CLO</u>	<u>Assessment Type</u>	<u>Week</u>	<u>Target</u>
DA 18	1	Exam 1	4	70% will earn “70%” or better
DA 18	2	Exam 2	9	70% will earn “70%” or better
DA 18	3	Exam 3	15	70% will earn “70%” or better
DA 20	5	Exam 1	4	70% will earn “70%” or better
DA 20	9	Exam 2	9	70% will earn “70%” or better
DA 20	11	Exam 3	15	70% will earn “70%” or better

### **F. Course Resource Materials Requirements:**

#### ***Textbook:***

Mechanical and Electrical Systems for Construction Managers  
Third Edition  
American Technical Publishers [ATP]  
ISBN: 978-0-8269-9363-2



### **G. Course Requirements:**

#### **Conduct**

I believe that students are adults and you will be treated and respected as such. Simply put, this means that you will be held accountable for your actions, decisions, and the consequences. I expect each of you to conduct yourself in a professional and mature manner, showing courtesy and respect for fellow students and the instructor. Please review the Universities Disruptive Behavior policy under section M of this document.

#### **Advisory Note!**

- **During class time any disruptive or annoying behavior, outbursts, unbecoming language, or personal visiting during discussion time will result in you being asked to leave and forfeit that day’s quiz and or exam points.**
- **Your personal agenda must be set aside during class time for the greater good of all your classmates.**

### **Honesty in the Classroom**

You are expected to be familiar with the University's policy on academic integrity. As such, there will be no tolerance for dishonesty, sharing of work, and especially copied work. Ethical standards as established by the university will be strictly upheld (see THE UNIVERSITY CATALOG).

### **Tobacco Products**

The use of any type of tobacco product (smokeless, chewable or otherwise) is not permitted in any building at California State University, Chico. If you chew tobacco products, please refrain during class time.

### **Electronic Devices**

The use of pagers, phones, MP3 players and other electronic devices (excluding laptops) is not permitted in class. If you must take a call (work or emergency), please EXIT the classroom before answering the call.

### **Withdrawal from Class**

Please refer to the Academic Calendar Deadlines as published in the University Catalog.

### **Professional Work**

As a student looking towards gaining an internship within the construction industry, [\*it is expected that your completed work will be professional in presentation.\*](#) Consider this course as practice in presenting professional quality industry work to your future employer.

## **H. Instructional Methods:**

This course is designed around the following methods of presenting material to the student:

1. Class discussions and assigned readings.
2. Example MEP design activities will be worked through in class. Students will work through similar problems in the Skill Review assignments outside of class to reinforce their learned skills of MEP understanding and design considerations.
3. Check-In's to expand the student's construction vocabulary, comprehension of discussion material, and assigned readings.

## **I. Assignments:**

### **Check In:**

Discussions will often begin with a Check In (Quizz). This check in will start promptly at the beginning of class and will be collected at 11:10 AM or 11:15 AM, depending on the number questions. After this time no submissions will be accepted. Failure to complete this by the time allotted will result in a 0. No make ups will be allowed.

### **Skill Review:**

Skill review assignments will be assigned in class and will be due on the following discussion no later than 11:05 AM. Failure to submit the skill review by this time will result in a 50% deduction. Failure to submit the skill review by the end of the discussion will result in a 0. No make ups will be allowed.

### **Advisory Note!**

- **There will be NO class time available for printing assignments at the beginning of class.**
- **Assignments will be collected at the beginning of class and any submission during class time will be considered tardy and will be docked 50% of the available points.**
- **All other submission are considered late and will not be accepted for credit, unless prior arrangements have been made.**

### **Readings**

Readings are noted in the course calendar. You are encouraged to have the required reading completed prior to class, as this will facilitate your comprehension of discussion materials.

### **J. Assessments:**

Assessments are the basis of determining your ability to create, analyze, apply, and understand the Course Learning Outcomes (CLO) and Student Learning Outcomes (SLO) provided by ACCE. Instructional target goals have been established (as noted above) and the results of the assessment in these areas will be used to determine the success of the student and instructor for this course.

### **Exams**

There will be four exams including the final. Exam 4 will have overall coursework objectives comprehensive questions. There will not be a make-up for anyone missing an exam. *If a student is unable to take an exam due to an emergency or illness, or is entitled to special dispensation **the instructor should be notified in advance with documentation from health facility.** Non-excused absences will yield a score of zero. Failure to turn in the exam with your answer sheet will yield a score of zero.* No makeup exams will be given, except for a serious and compelling reason as outlined by the University Catalog.

### **K. Grading/Evaluation:**

All point totals shown are approximate and subject to revision during the course of the semester.

<b>Evaluation Criteria</b>	<b>Points</b>	<b>% of Grade</b>	<b>Weighting</b>
<u>Check In / Quizzes</u>			20%
11 Quizzes / 10 Points each	110 / 100	20%	
<u>Skill Review</u>			30%
Skill Review / Count TBD	150 points	30%	
<u>Exams</u>			36%
Exam 1	60 points	12%	
Exam 2	60 points	12%	
Exam 3	60 points	12%	
<u>Final</u>			14%
Final Exam	70 points	14%	

Grades are generally assigned by the following distribution, instructor reserves the right to modify the distribution.

A	=	94 -100% (Exceptional)	C+	=	77 – 79% (Above Average)
A-	=	90 – 93% (Excellent)	C	=	73 – 76% (Average)
B+	=	87 – 89% (Very Good)	C-	=	70 – 72% (Below Average)
B	=	83 – 86% (Good)	D	=	60 – 69% (Inadequate)
B-	=	80 – 82% (Adequate)	F	=	< 60% (Failing)

## **L. Topical Outline**

Refer to the course work calendar posted on Blackboard Learn.

## **M. University Policies and Campus Resources**

### **Disruptive Behavior**

Students are required to adhere to the behavior standards articulated in the Campus Policies and Code of Student Conduct, and to refrain from disrupting classes and other academic settings. "Disruptive behavior" means conduct that materially and substantially interferes with or obstructs the teaching or learning process in the context of a classroom or educational setting. Disruptive behavior includes conduct that distracts or intimidates others in a manner that interferes with instructional activities, fails to adhere to an instructor's appropriate classroom rules or instructions, or interferes with the normal operations of the University. Disruption in the classroom may include:

- Persistent speaking without permission.
- Side conversations.
- Excessive talking.
- Engaging in activities not related to the class, or other overt inattentiveness including but not limited to sleeping, talking to others, doing work for another class, checking e-mail, and exploring the Internet.
- Ringing cell phones or using a cell phone.
- Using mobile devices or laptop computers in the classroom for non-course related purposes.
- Eating/drinking in class without permission.
- Monopolizing class discussion and refusing to defer to instructor, or listen to others; persisting when the instructor has indicated that the student's remarks are off topic and it is time to move on.
- Chronically entering late/leaving early, moving about the classroom when not appropriate for the classroom activity.
- Filming, photographing, or taping the class without the instructor's prior permission.
- Disputing authority or arguing with faculty and other students.
- Yelling, arguing, swearing, bullying, or other harassing or intimidating behavior.
- Inappropriate, disrespectful, or uncivil responses to the comments, opinions, presentations, etc. of others in the classroom.
- Physically or verbally abusive conduct.
- Failure to adhere to the instructor's rules or instructions.
- Vulgar or obscene language, slurs or other forms of intimidation.

- Threats of any kind.
- Improper use of equipment, materials or resources.
- Destruction of property.
- Coming to class under the influence of alcohol or another controlled substance.
- Bringing individuals to class who are not enrolled, including infants/children.
- Any behavior that puts the health or safety of the instructor or other students in the classroom in jeopardy.

### **Academic integrity**

Students are expected to be familiar with the University's Academic Integrity Policy and the University's policy on academic honesty. I take this issue very seriously, and will not tolerate any form of dishonesty such as plagiarism or cheating. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at:

<http://www.csuchico.edu/prs/EMs/2004/04-036.shtml>

### **Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Students with disabilities requesting accommodations must register with the ARC Office (Accessibility Resource Center) <http://www.csuchico.edu/prs/EMs/2005/05-019.shtml> to establish a record of their disability.

Special accommodations for exams require ample notice to the testing office and must be submitted to the instructor well in advance of the exam date.

### **Student Computing**

Computer labs for student use are available <http://www.csuchico.edu/prs/EMs/2007/07-001.shtml> located on the 1st floor of the Merriam Library Rm 116 and 450, Tehama Hall Rm.131 and the BMU Rm 301.

### **Student Services**

Student services are designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. Students can find support for services such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. Student services information can be found at: <http://rce.csuchico.edu/alci/student-services>

### **Disability Services**

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please also contact the Accessibility Resource Center office to coordinate reasonable accommodations for students with documented disabilities. Accessibility Resource Center online:

<http://www.csuchico.edu/arc/instructors/support-services.shtml>.

### **Student Learning Center**

The mission of the Student Learning Center (SLC) is to provide services that will assist CSU, Chico students to become independent learners. The SLC prepares and supports students in their college course work by offering a variety of programs and resources to meet student needs. The SLC facilitates the academic transition and retention of students from high schools and community colleges by providing study strategy information, content subject tutoring, and supplemental instruction. The SLC is online at <http://www.csuchico.edu/slc/>. The University Writing Center has been combined with the Student Learning Center.

### **N. Other**

#### **Title IX: Confidentiality and Mandatory Reporting**

As a Chico State instructor, one of my responsibilities is to help create a safe learning environment for Chico State students. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. **However, I am required to share information regarding sexual misconduct with the University.**

Students may speak to someone confidentially by contacting the Counseling and Wellness Center (898-6345) or Safe Place (898-3030). Information about campus reporting obligations and other Title IX related resources are available here: <http://www.csuchico.edu/title-ix>.