

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

**CMGT 350 – Statics and Strength of Materials
Course Syllabus**

A. Prerequisites

MATH 109 or MATH 120 and PHYS 202A

B. Meeting Time & Location

CMGT 350-01	Class # 9577	T/TH	11:00 a.m. – 12:15 p.m.
CMGT 350-02	Class # 9578	T/TH	12:30 p.m. – 1:45 p.m.

C. Instructor

Lori Brown	labrown2@csuchico.edu
Office Hours:	Monday & Wednesday 1:00 PM – 3:00 PM (Online in Personal ZOOM ROOM) Meeting ID: 894 3325 0434 Passcode: 104522
Email Address:	labrown2@csuchico.edu
Office Phone:	None
Office Location	Zoom Room

Tutoring and Study Session with Instructor: Wed. 5:00 p.m. – 8:00 p.m. - ZOOM Room (see lorisweb.com)

D. Catalog Description:

A study of fundamental engineering mechanics including forces, static equilibrium, and simple truss analysis. The coursework includes the concepts and mathematical calculations of stress, strain, and deflection within structural elements encountered in construction. The rationale and factors of safety for sizing and design of these elements is covered. (3 hours discussion)

E. Course Learning Outcomes (CLO):

Upon successful completion of this course, the student will:

1. Understand how to analyze the equilibrium of rigid bodies, draw free body diagrams, and apply vectors to systems and subsystems, including but not limited to beams, trusses, and frames. **(Reinforce: ACCE-SLO #19).**
2. Understand the effects of forces and moments on, and engineering properties of, real construction structural materials. This includes analyzing and designing components considering the three S's of Mechanics of Materials: Strength, Serviceability, and Stability.
3. Understand the internal stress and strain state created under loading of long, slender axis symmetric structural elements (struts, beams and columns).
4. Demonstrate the ability to construct shear force and bending moment diagrams for transversely loaded elements (beams) **(Reinforce: ACCE-SLO #19).**
5. Demonstrate the ability to analyze and design steel and timber beams for shear and moment and to check beam deflections under given loading **(Reinforce: ACCE-SLO #19).**
6. Understand how to calculate stresses at a point under combined loading and apply Mohr's Circle to calculate maximum shear and normal stresses.
7. Demonstrate the ability to analyze steel and timber columns **(Reinforce: ACCE-SLO #19).**

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 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 #19: Understand the basic principles of structural behavior.

There are no Direct Assessments (DA) performed in this course

F. Course Resource Materials Requirements:

Textbook: *Statics and Strength of Materials*, Cheng, Fa-Hwa, 2nd Edition, Glencoe/McGraw-Hill, 1997. *Required*

Course Pack: A course pack will be built from handouts provided throughout the semester

Laptop Computer: A computer will not be required for assigned activity work.

G. Course Requirements:

Conduct

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. It is expected of 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.

- **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 participation 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 lectures and assigned readings.
2. Out of class problem sets from the textbook and other sources.
3. Quizzes and exams to assess the student's knowledge of lecture material and readings.

I. Assignments:

Homework will be assigned on a regular basis. Homework is not collected. Solutions are posted on the course Web site on Friday.

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.

Group Work

You are encouraged to study and work in groups, however all submitted work must be your own.

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.

Quizzes will be given weekly at each Thursday lecture. Quizzes will be questions like the homework questions and examples from class. There will be **no** makeup quizzes.

Three exams will be given and a **comprehensive final exam**. **No** makeup exams will be given except for a serious and compelling reason as outlined by the University Catalog.

Attendance

Students who attend regularly (miss no more than two class meetings) and SIGN THE ROLL SHEET will receive 30 bonus exam points at the end of the term.

K. Grading/Evaluation:

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

Final Course Grades are computed as follows:

Quizzes	200 pts [All 12 quizzes are counted toward the total]
Exams (three)	300 pts
Final Exam	<u>100 pts</u>
Total Points Possible	600 pts

Evaluation:

A	93-100%	C+	75-77%
A-	90-92%	C	71-74%
B+	85-89%	C-	67-70%
B	81-84%	D	60-66%
B-	78-80%	F	below 60%

L. Topical Content

Date	Day	DIS	Chapt.	Topic	Text Reading
8/23	T	1	1	Fundamental Concepts and Principles A Brief Review of Mathematics	1-1 through 1-14
8/25	R	2	2	Resultant of Concurrent Coplanar Force Systems Quiz #1	2-1 through 2-5
8/30	T	3		TBD	
9/1	R	4		Moment of a Force, Varignon's Theorem, Couple Quiz #2	2-6, 2-7, 2-8, 2-9
9/6	T	5		Resultant of Nonconcurrent Coplanar Force System Resultant of Distributed Line Loads	
9/8	R	6	3	Equilibrium of Coplanar Force Systems Quiz #3	3-1, 3-2, 3-3, 3-4
9/13	T	7		Equilibrium of Concurrent Coplanar Force Systems	3-5
9/15	R	8		Equilibrium of Nonconcurrent Coplanar Force Systems Three-Force Body Quiz #4	3-6
9/20	T	9	4	Analysis of Structures	4-1 through 4-5
9/22	R	10		Exam #1 - Chapters 1, 2, 3	
9/27	T	11		Analysis of Structures Frames and Machines	4-6, 4-7
9/29	R	12	7	Center of Gravity and Centroids Quiz #5	7-1 through 7-5
10/4	T	13	8	Area Moment of Inertia	8-1, 8-2, 8-3, 8-4
10/6	R	14		Moment of Inertia of Built-Up Structural Steel Sections Quiz #6	8-5
10/11	T	15	9	Simple Stresses	9-1, 9-2, 9-3
10/13	R	16		Direct Shear Stresses. Bearing Stresses Quiz #7	9-4, 9-5
10/18	T	17	10	Strain	10-1 through 10-4
10/20	R	18	11	Mechanical Properties of Materials Quiz #8	11-1 through 11-6
10/25	T	19	13	Shear Forces and Bending Moments in Beams	13-1 through 13-5
10/27	R	20		Shear Forces and Bending Moment Diagrams Quiz #9	13-6, 13-7, 13-8
11/1	T	21	14	Stresses in Beams	14-1 through 14-4
11/3	R	22		Exam #2 - Chpts 7, 8, 9, 10, 11	
11/8	T	23		Shear Stress Formula for Beams	14-5
11/10	R	24	15	Design of Beams for Strength Quiz #10	15-1, 15-2, 15-3
11/15	T	25		Design of Beams for Strength	
11/17	R	26	16	Deflections of Beams Quiz #11	16-1, 16-2, 16-3
11/22	T	27		Thanksgiving Break	
11/24	R	28		Thanksgiving Break	

11/29	T	29	18	Combined Stresses	18-1, 18-2, 18-3
12/1	R	30		Exam #3 - Chapters 13, 14, 15, 16	
12/6	T	31		Eccentrically Loaded Members	18-3, 18-4
12/8	R	32		Final Exam Review Quiz #12	
TBA				Final Exam - Comprehensive Exam	

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. Academic honesty is paramount to your personal integrity and should be taken seriously. Violations, such as plagiarism or cheating, will not be tolerated. 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, all faculty and staff are required to share information regarding sexual misconduct with University officials.**

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>.