

Department of Civil and Environmental Engineering
Colorado State University
CIVE 466 - Design and Behavior of Steel Structures
Spring 2018

- Instructor:** Robert I Johnson SE, PE, PhD
Office: A207G Engineering Building
Phone: (970) 491-7613
E-Mail: Bob.Johnson@colostate.edu
Office Hours: MWF – 8-9 am, 10-11 am, 1-2 pm, 3-4 pm
- Class Hours:** Monday, Wednesday and Friday 2:00 – 2:50 pm
Room: Glover 201
Textbook: **Steel Design (6th Edition)** William T. Segui
American Institute of Steel Construction, *Steel Construction Manual*, 14th Edition, AISC 2011. We will discuss and apply the AISC design procedures throughout the class. Therefore, you are required to bring the manual to every class. The procedure for purchasing the manual at a discounted student rate will be explained in class.
- Prerequisites:** CIVE 367
- Homework:** Homework problems will be assigned regularly and will be due one week or 10 days after being assigned, unless stated otherwise, at the beginning of class or on Canvas. Late HWs will not be accepted. You are encouraged to discuss the problems with your colleagues. However you must provide your own solution. It is very important that you submit neat and well organized HW. Points will be deducted for sloppy work. Solutions are to be developed using a pencil and a ruler and presented on engineering paper (points will be deducted if this is not followed).
- Term Exams:** Two midterm exams during the semester. Only FE exam approved calculators will be allowed during the tests. You will use your own steel manual during tests. No writing is allowed in the manual. Your own front and back 8.5 x 11 cheat sheet is allowed (should only include equations but NOT examples and/or definitions).
- Project:** The project will consist of conducting analysis and design of structures using the commercial software RISA 3D and/or SAP2000. The class will be divided into groups. Each group is expected to submit a report summarizing their findings. The report will be graded on the technical content and on the proper writing and grammar. You will need to submit your report as a printed document and also email a Microsoft Word version to Dr. Johnson. More details on the project will be provided in class at the appropriate time.

Class Participation: Your class participation points will be deducted if:

- You use your cell phone or you cell phone rings during class
- You hold any private conversations once class starts
- You conduct any disrespectful behavior during class

Students who lost their participation points will be asked to leave the class and will be referred to the Office of Conflict Resolution and Student Conduct Services.

Final Exam: A cumulative final exam, May 8, 7:30 – 9:30 a.m. The same rules for term exams apply.

Grading:	Homework	20%
	Term Exams	40% (2@20% each)
	Project	7%
	Class Participation	3%
	Final Exam	30%

	Total	100%

Grading Scale: Grades for this course will use the traditional grading system:
A 90 – 100% B 80 – 89% C 70 – 79% D 60 – 69% F below 60%

Scholastic Conduct: The course will adhere to the academic integrity Policy of Colorado State University General Catalog (Page 7) and the student Conduct Code. CSU and college of engineering polices on academic integrity can be found on the web at:
<http://catalog.colostate.edu/Content/files/2012/FrontPDF/1.6POLICIES.pdf>

These polices will be strictly enforced. Any violation to the policies will result in dismissal from the course with grade “F” and possible dismissal from the university.

Exams may include the following Honor Pledge for you to sign, Exams, and Term Project: ***I have not received or given any unauthorized assistance in this exam.***

List of Topics: The course will include the following topics:

1. Background on Structural Steel and Design Philosophies
2. Loads and Load Combinations
3. Tension Members
4. Compression Members
5. Flexural Members
6. Members with combined Axial and Flexural Loads (beam-columns)
7. Connections (bolted and welded)

Class Objectives: Enable students to:

1. Understand the mechanical behavior of steel as a construction material
2. Evaluate the physical behavior and interaction of various structural components
3. Be cognizant of and understand the relationship between experimental tests and code equations
4. Apply design procedures for structural components using the design specification
5. Verify the adequacy of a given member, connection, or structural system.