Instructor: Dr. Gaofeng Jia  
Office: Engineering Building, Room A205H  
Email: Gaofeng.Jia@colostate.edu  
Office hours: MW 2:00-3:00pm, F 10:00-11:00am, at A205H

Textbook:  

Course objectives:  
After successfully completing this course, a student will be able to  
- Apply loads to structural members  
- Determine whether a structure is stable or not, statically determinate or indeterminate  
- Solve for forces within structural members, and draw shear and moment curves  
- Draw influence lines for reactions, shear, and moment in structures  
- Use different methods to calculate the deflections and rotations of structures  
- Use flexibility and stiffness methods to solve for forces in indeterminate structures  
- Understand the concepts of general stiffness method and matrix structural analysis

Outline of topics:  
- Design loads (Ch. 2)  
- Statics of structures (Ch. 3)  
  - Reactions  
  - Stability and determinacy of structures  
- Trusses (Ch. 4)  
  - Method of joints  
  - Method of sections  
- Beams and Frames (Ch. 5)  
  - Shear and moment curves  
- Influence lines (Ch. 8)  
  - Construction of influence lines  
  - The Muller-Breslau principle  
  - Use of influence lines  
- Deflections of beams and frames (Ch. 9)  
  - Double integration method  
  - Moment-area method  
  - Conjugate beam method
• Work-energy methods for computing deflections (Ch. 10)
  – Virtual work: trusses
  – Virtual work: beams and frames
• Flexibility method for analysis of indeterminate structures (Ch. 11)
• Slope-deflection method for analysis of indeterminate structures (Ch. 12)
• General stiffness method (Ch. 16)

Homework:
• Homework will be assigned regularly (approximately every week), and is due one week later, and must be submitted at the beginning of class on the day it is due
• Late homework will not be accepted
• You are encouraged to discuss the problems with other students; however, any work you turn in must be your own

Course website:
Canvas. Homework assignments and solutions, handouts, and supplemental readings will be posted on Canvas

Grading:
• Homework: 30%
• Quizzes: 10%
• Midterm I: 15%
• Midterm II: 15%
• Final exam: 30%

Letter grading:
A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: <60 (with +/-)

Academic Integrity:
The course will adhere to the academic integrity Policy of Colorado State University General Catalog (Page 7) and the student Conduct Code.