Instructor: R. I. Johnson, PhD., S.E., P.E., SECB

Office: A207G Engineering Building – Phone (970) 491-7613 (Don’t leave voicemail)

Office Hours: MWF 8:00 -9:00 am, 10:00-11:00 am, 1:00-2:30 pm and by appointment; many times I may be in the office from 1:00-4:00; if the door is open, I’m available.

Email: bob.johnson@colostate.edu


Learning objectives/goals:

1. Be able to use ASCE 7 to determine basic gravity and simple lateral loads on structures and be able to apply and properly distribute those loads to structural members
2. Be able to quickly determine if a structure is stable or unstable and whether it’s statically determinate or indeterminate
3. Successfully solve for forces within structural members and systems (frames, etc.) and be able to translate those forces into correct shear and moment diagrams
4. Understand the theory behind influence lines and successfully formulate influence lines for shear, moment or reactions in determinate and indeterminate structures.
5. Understand the basis of and be able to successfully apply different methodologies to obtain rotations and deflections of structures and structural elements
6. Understand and be able to appropriately use the flexibility and stiffness methods to evaluate and solve for forces/reactions in indeterminate structures and understand what a redundant is

There will be six to eight homework problems assigned every week, which will be due one week later. I prefer that questions be asked at the beginning of the class about the homework or any other previously discussed subject so that everyone can have the same answer.

Grading will be as follows:

Homework: 20%
Midterms (3): 48% - Dates to be determined
Final: 32%

Letter grading:
90-100% A, 80-89% B, 70-79% C, 60-69% D
CIVE 367: STRUCTURAL ANALYSIS
FALL 2015

Tentative Syllabus

Topics to be covered in approximate order:

 Loads
 Stability and determinacy of beams and frames
 Stability and determinacy of trusses
 Analysis of trusses – Method of joints, method of sections
 Analysis of beams – Shear and moment diagrams
 Influence lines for determinate structures
 Elastic beam theory – deflections
 Conjugate beam method – deflections
 Work and energy methods – Virtual work/Castigliano’s second theorem
 Force (flexibility) method for indeterminate structures
 Influence lines for indeterminate structures
 Stiffness method – Slope deflection method for indeterminate structures
 Stiffness method – Moment distribution method for indeterminate structures

Fall recess: 11/21/15 through 11/29/15

Final Exam: 12/17/15 from 4:10-6:10 am (there goes dinner) – In our classroom

Homework Format

See the required homework format posted on Canvas for the correct layout and format of your homework assignments.