

**CIVENV 320 Structural Analysis - Dynamics (Fall 2018)**  
**COURSE SYLLABUS**

**Instructor** : Prof. Sinan Keten  
**Email** : [s-keten@northwestern.edu](mailto:s-keten@northwestern.edu)  
**Office** : TECH A133  
**Office Hours** : Wed 2:00PM-3:00PM, or by appointment  
**Phone** : (847)-491-5282  
**Class Times and Location** : MWF 1:00PM-1:50PM, TECH M128  
T 9:30AM-10:50AM TECH M164 (extra lecture)

**Course Outcomes** At the conclusion of the course, students will be able to:

- Describe the behavior of single and multiple degree of freedom dynamic systems
- Construct and interpret response spectra for dynamic structural behavior
- Complete a limited structural design to resist earthquake loads using the equivalent force method

**Prerequisites** CIV\_ENV 216 & 221 or equivalent. CIV\_ENV 325 or 323 recommended.

**Grading**

**Homework 15%**  
There will be approximately eight homework assignments over the course of the quarter, due a week after assignment. No due date extensions will be offered, however, the lowest homework assignment score will be dropped from the homework grade.

**Project Reports 20%**  
Approximately two individual or team assignments focusing on earthquake analysis and report writing will be given.

**Midterm 25%**  
1.5 hour midterm exam during Tuesday lab session

**Final Exam 35%**  
Two hour final exam

**Teamwork and Participation 5%**  
Instructor's assessment of your participation in class and contribution to team products

**Homework**

- Solutions to the HW will be posted on Canvas after due date. Homework not accepted after due date. Lowest HW score will be dropped
- Use engineering paper, write on one side of page only, use pencil, and show work. ***You are graded on neatness and presentation in addition to results - this is also true in exams.***

**Website** I will be using Canvas for announcements, updates, and to post grades and HW solutions. Please check Canvas daily to stay up to date, and to confirm accuracy of grade records.

**Lab** As needed, the Lab session will be an extra lecture and exam period. Later in the quarter we will transition to workshops focusing on the Programming Report.

**Textbook** Required: Anil K. Chopra (2017); *Dynamics of Structures: Theory and Applications to Earthquake Engineering*; 5th Edition; Pearson Prentice Hall, Inc.  
Optional: *ASCE 7-10 Minimum Design Loads for Buildings and Other Structures*.