

CEE 517: Design for Wind
<http://courses.washington.edu/cee517/>

Course Description:

Study of wind effects on structures, including: atmospheric boundary layer flow; bluff body aerodynamics; structural dynamics and aeroelasticity; development and use of the ASCE Standards; estimation of along-wind, across-wind and torsional response of tall buildings; design strategies for avoiding wind-induced discomfort in humans. Fundamentals of wind tunnel testing.

Instructor:

Professor Dorothy Reed
reed@uw.edu
263 Wilcox, (206) 543-0351
Office Hours: TBA

Text:

- Simiu, E. and T. Miyata. (2006). *Design of Buildings and Bridges for Wind*. Hoboken, NJ: John Wiley and Sons, pp. 308.
- Notes, Handouts.

Grading:	Final (Thursday, June 9th 2:30 4:20PM))	50%
	Midterm (April 27)	25%
	Homework	25%

Tentative Course Outline:

Week	Topics	Background Material
1-2	Overview of wind engineering; atmospheric boundary layer flow, analysis of extreme winds, introduction to the ASCE-7 Standard	Text; Relevant sections of ASCE7 to be provided
3-5	Bluff body aerodynamics; Low rise structures	Text; papers/ handouts
6-7	Introduction to structural dynamics, wind directionality considerations; tall buildings	Text; papers and handouts
8-10	Serviceability calculations and design of structural control devices for tall buildings; wind tunnel testing as related to tall building design in practice, and analysis of bridges.	Text; papers and handouts
