

UNIVERSITY OF SOUTHERN CALIFORNIA
Sonny Astani Department of Civil and Environmental Engineering

Spring 2025

CE 541	DYNAMICS OF STRUCTURES (4.0 units) https://courses.uscdcn.net
Instructor:	Sami F. Masri KAP 206A; Telephone: (213) 740-0602, 740-0603 email: <i>masri@usc.edu</i>
Office Hours:	Monday: 11:00 am - 12:00 pm; other times by appointment
Teaching Assistant: T.A. Office Hours:	Nihan Bilgin email: <i>nbilgin@usc.edu</i> Monday: 10:00 am - 12:00 pm; Wednesday: 10:00 am - 12:00 pm; (KAP 241); Other times by appointment.
Class No.	29781R, 29782D
Class time & Place:	Monday 12:00 - 3:20 pm ; DEN Room: RTH 115
Textbook:	“Fundamentals of Vibrations,” by L. Meirovitch (Waveland Press), 2010 “Mathematica Navigator,” (3rd Edition) by Heikki Ruskeepaa, Academic Press, 2009
Prerequisite:	(Graduate Standing)
Drop Dates:	4 February 2025 without “W”; 28 February 2025 with “W”
Final Exam:	No Final Exam; class project instead (due: F 2 May 2025)
Grades:	Homework / Midterm / Course Project: 25% / 25% / 50% (<i>No Final Exam</i>)
Remarks:	Weekly assigned homework problems and bi-weekly computer projects Late Homework or projects will not be accepted. No make-up on any examinations.

COURSE OUTLINE

1. Single-Degree-of-Freedom Systems
2. Systems With Several Degrees-of-Freedom
3. Energy Methods
4. Elements of Analytical Dynamics
5. Vibration of Continuous Systems (Exact Methods)
6. Vibration of Continuous Systems (Approximate Methods)
7. Reduced-order SDOF models (EQ problems/response of distributed systems)
8. Random Vibration Concepts; Response of Continuous Systems to Random Excitation
9. Nonlinear Systems; Geometric Theory; Approximate Methods
10. Computational Techniques