



Basic Structural Dynamics, 1/e

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About the Book

A concise introduction to structural dynamics and earthquake engineering

Basic Structural Dynamics serves as a fundamental introduction to the topic of structural dynamics. Covering single and multiple-degree-of-freedom systems while providing an introduction to earthquake engineering, the book keeps the coverage succinct and on topic at a level that is appropriate for undergraduate and graduate students. Through dozens of worked examples based on actual structures, it also introduces readers to MATLAB, a powerful software for solving both simple and complex structural dynamics problems.

Conceptually composed of three parts, the book begins with the basic concepts and dynamic response of single-degree-of-freedom systems to various excitations. Next, it covers the linear and nonlinear response of multiple-degree-of-freedom systems to various excitations. Finally, it deals with linear and nonlinear response of structures subjected to earthquake ground motions and structural dynamics-related code provisions for assessing seismic response of structures.

Salient Features

- Single-degree-of-freedom systems
- Free vibration response of SDOF systems
- Response to harmonic loading
- Response to impulse loads
- Response to arbitrary dynamic loading
- Multiple-degree-of-freedom systems
- Introduction to nonlinear response of structures
- Seismic response of structures

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