

1. Record Nr.	UNINA9910403764603321
Autore	Hejazi Farzad
Titolo	Conceptual Theories in Structural Dynamics // by Farzad Hejazi, Tan Kar Chun
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-5440-4
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (227 pages)
Collana	Advanced Structured Materials, , 1869-8433 ; ; 135
Disciplina	624.171
Soggetti	Mechanics Mechanics, Applied Structural materials Continuum physics Solid Mechanics Classical Mechanics Structural Materials Classical and Continuum Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Introduction -- 2. Components of Structural Dynamics -- 3. Free Vibration of Single Degree of Freedom System -- 4. Force Vibration of Single Degree of Freedom System -- 5. Single Degree of Freedom Systems Subjected to Various Excitations.
Sommario/riassunto	This book discusses the conceptual theory of structural dynamics, using simplified methods and clear, concise explanations. It illustrates all the hypotheses in a simple and effective way and describes in detail the derivation of all related formulations. Further, comprehensive step-by-step explanations combined with conceptual derivations, drawings and figures allow readers to grasp all the analytical formulations related to the dynamics of structures. Covering free and forced vibrations of single- and multi-degree of freedom systems represented as structure, subjected to dynamic load, the book also explores the most common types of dynamic loads applicable to structures, such as harmonic loads, impact loads and earthquakes, presenting relevant details, derivations and effective problems to explain the concept for various

conditions. In addition, each chapter provides examples at different levels to help students, researchers and engineers gain a better understanding of the topics better, and includes numerous real-world problems to familiarize readers with the challenges related to structural engineering.
