

Δυναμική των Κατασκευών

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Abstract

This textbook presents in a simple and understandable way the basic physical and mathematical principles of Structural Dynamics, with an emphasis on Earthquake Engineering. It is mainly intended for civil engineers and structural engineers and therefore includes computer software packages in Java programming language, which can be used to develop a variety of examples with applications in earthquake analysis. Prerequisite knowledge includes the basic chapters of Statics (analysis of isostatic and hyperstatic

structures, method of forces, method of displacements, etc.) and Mathematics (matrix theory, techniques for solving differential equations). In addition to developing the theoretical background of dynamics with examples of seismic response of simple structures, which form the core of the course, this book also contains sections on more advanced topics in dynamic analysis, as well as material on modern concepts in frame simulation, the use of spectra for seismic design, and seismic protection elements.

