1. Record Nr. UNINA9910460844703321 Autore Humar J. L **Titolo** Dynamics of structure / / by J. Humar Pubbl/distr/stampa Boca Raton, FL:,: CRC Press,, 2012 **ISBN** 0-429-09607-0 0-203-11256-3 Edizione [Third edition.] Descrizione fisica 1 online resource (1048 p.) Disciplina 624.1/7 Soggetti Structural dynamics Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia "A Balkema Book." Note generali Nota di contenuto Front Cover; Dedication; Contents; Preface; Preface to Second Edition; List of symbols; 1. Introduction; PART 1; 2. Formulation of the equations of motion: Single-degree-of-freedom systems; 3. Formulation of the equations of motion: Multi-degree-of-freedom systems; 4. Principles of analytical mechanics; PART 2; 5. Free vibration response: Single-degree-of-freedom system; 6. Forced harmonic vibrations: Single-degree-of-freedom system; 7. Response to general dynamic loading and transient response; 8. Analysis of single-degreeof-freedom systems: Approximate and numerical methods 9. Analysis of response in the frequency domainPART 3: 10. Free vibration response: Multi-degree-of-freedom system; 11. Numerical solution of the eigenproblem; 12. Forced dynamic response: Multidegree-of-freedom systems; 13. Analysis of multi-degree-of-freedom systems: Approximate and numerical methods; PART 4: 14. Formulation of the equations of motion: Continuous systems; 15. Continuous systems: Free vibration response; 16. Continuous systems: Forced-vibration response: 17. Wave propagation analysis: PART 5: 18. Finite element method; 19. Component mode synthesis 20. Analysis of nonlinear responseAnswers to selected problems This major textbook provides comprehensive coverage of the analytical Sommario/riassunto

tools required to determine the dynamic response of structures. The topics covered include: formulation of the equations of motion for

single- as well as multi-degree-of-freedom discrete systems using the principles of both vector mechanics and analytical mechanics; free vibration response; determination of frequencies and mode shapes; forced vibration response to harmonic and general forcing functions; dynamic analysis of continuous systems; and wave propagation analysis.